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Vaughn

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(54) **ILLUMINATED FLAGPOLE ASSEMBLIES AND FLAG MOUNTING SYSTEMS**

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(21) Appl. No.: **17/741,830**

(22) Filed: **May 11, 2022**

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(63) Continuation of application No. 17/487,759, filed on Sep. 28, 2021, now Pat. No. 11,339,962.

(51) **Int. Cl.**

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F21S 8/08	(2006.01)
F21V 21/005	(2006.01)
F21V 23/06	(2006.01)
E04H 12/32	(2006.01)

(52) **U.S. Cl.**
CPC ***F21V 33/00*** (2013.01); ***E04H 12/32*** (2013.01); ***F21S 8/085*** (2013.01); ***F21V 21/005*** (2013.01); ***F21V 23/06*** (2013.01)

(58) **Field of Classification Search**
CPC F21V 33/00; F21V 21/005; F21V 23/06; F21S 8/085; E04H 12/32
See application file for complete search history.

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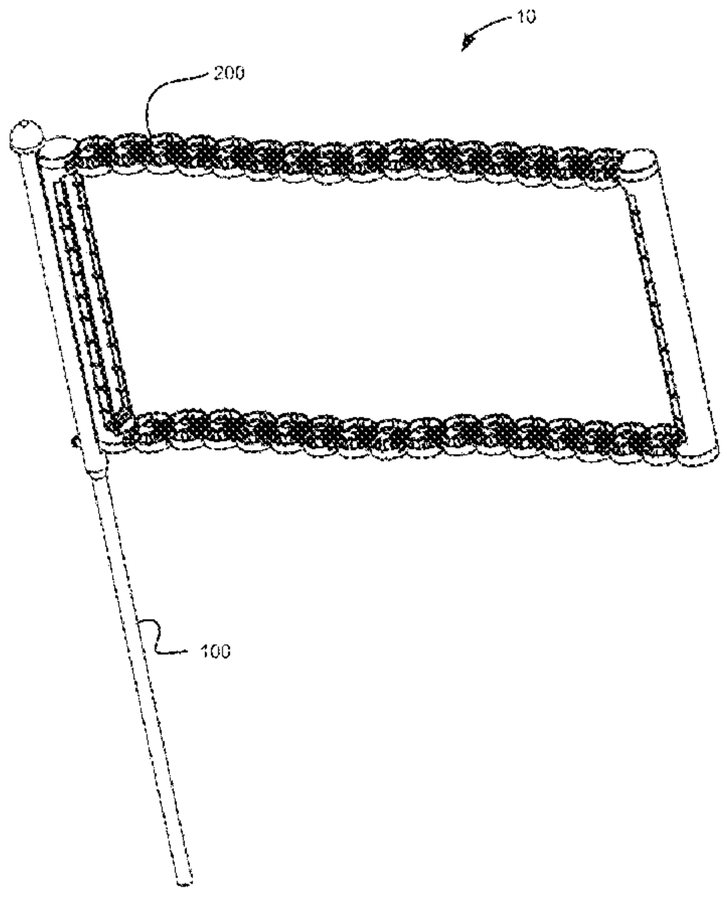
(74) *Attorney, Agent, or Firm* — Troutman Pepper Hamilton Sanders LLP; John A. Morrissett; Aaron E. Johnston

(57) **ABSTRACT**

Systems and devices for providing an illuminated flagpole assembly are disclosed. The assembly can include a hoist end member configured to be attached to a flagpole, a fly end member aligned in parallel with and opposite the hoist end member, an upper cross member, and a lower cross member. The upper cross member and lower cross member may each be formed of a respective plurality of links. Each plurality of links may be connected to one or more adjacent links and aligned along a plane. A first link of each of the plurality of links may be connected to the hoist end member and a second link of each of the plurality of links may be connected to the fly end member. Each link of the each of the plurality of links can be configured to swivel with respect to one or more adjacent links.

20 Claims, 23 Drawing Sheets
(1 of 23 Drawing Sheet(s) Filed in Color)



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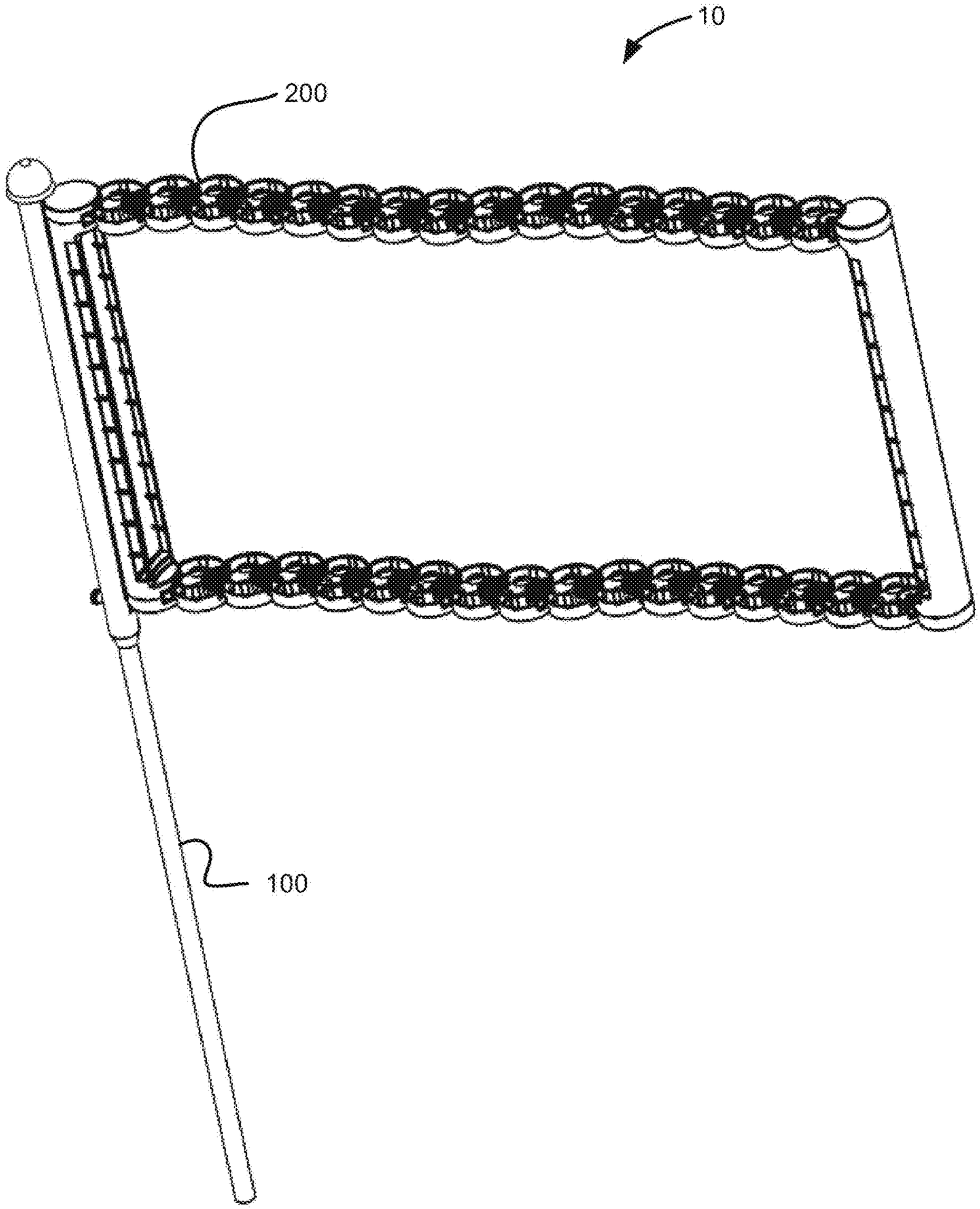

FIG. 1

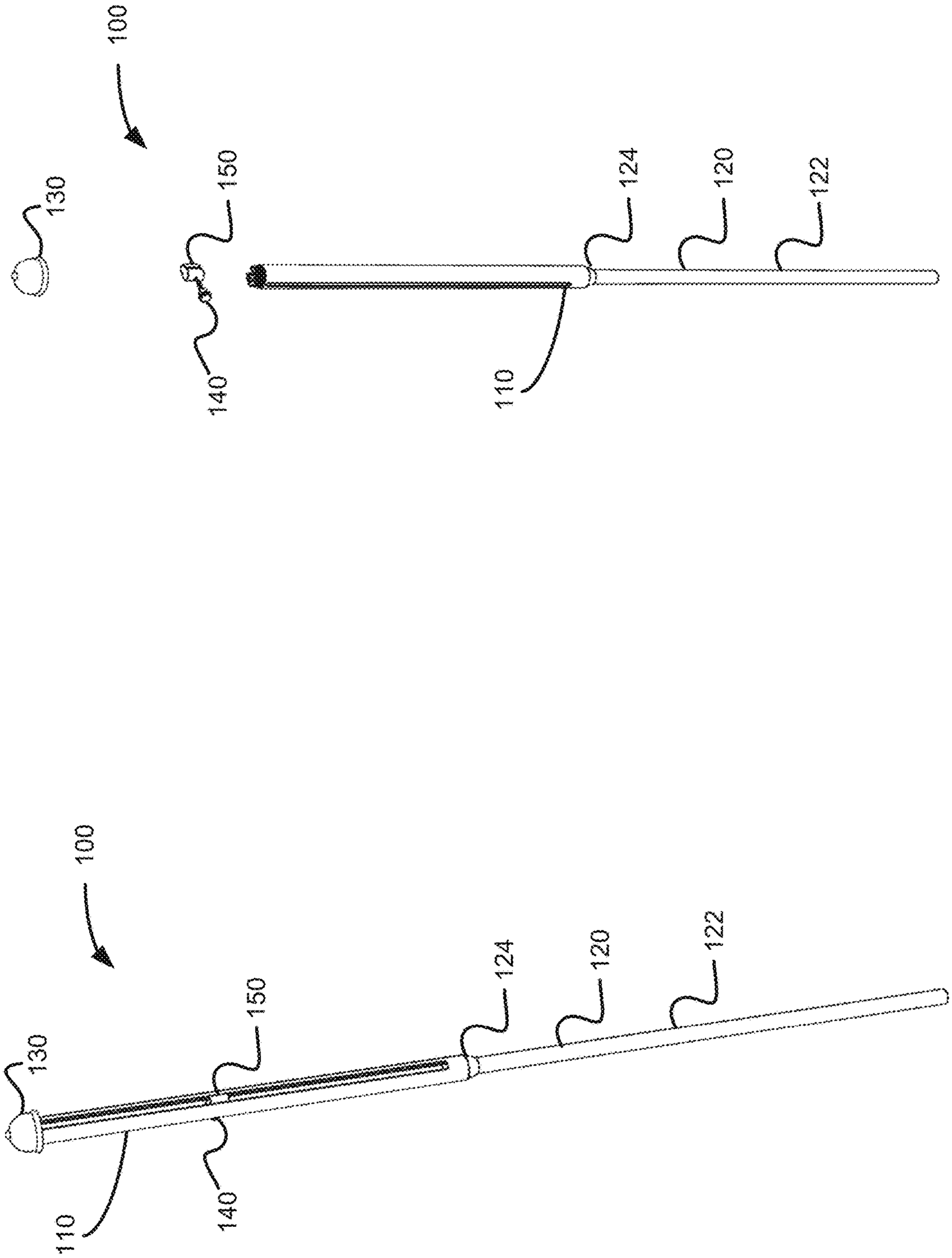

FIG. 2B

FIG. 2A

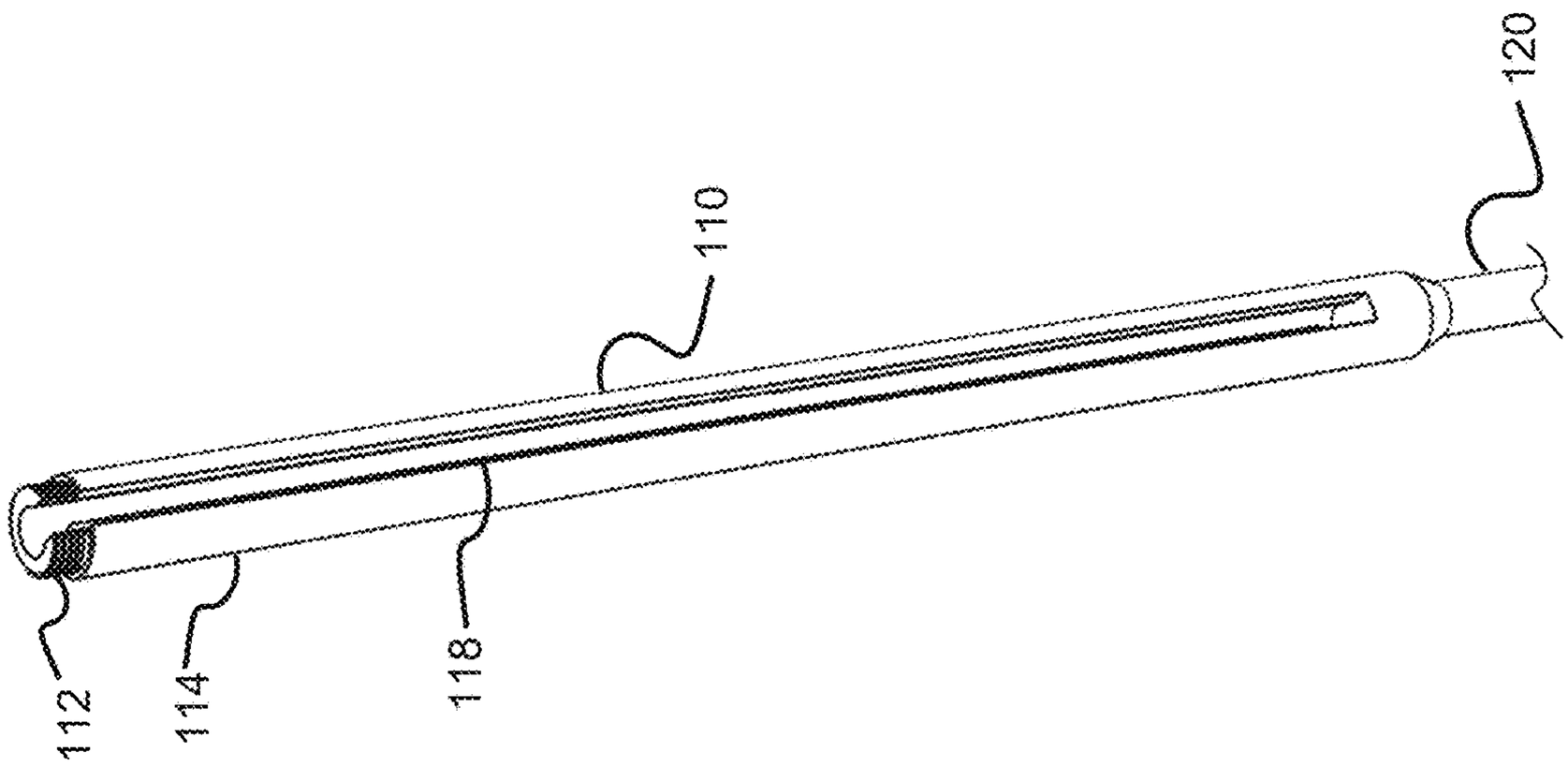

FIG. 3B

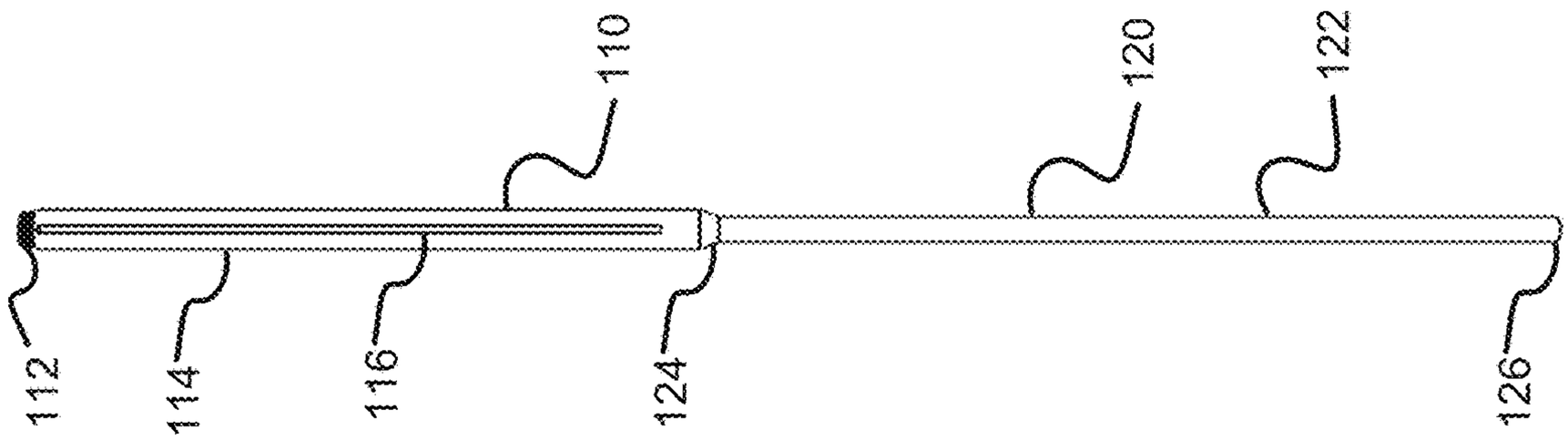

FIG. 3A

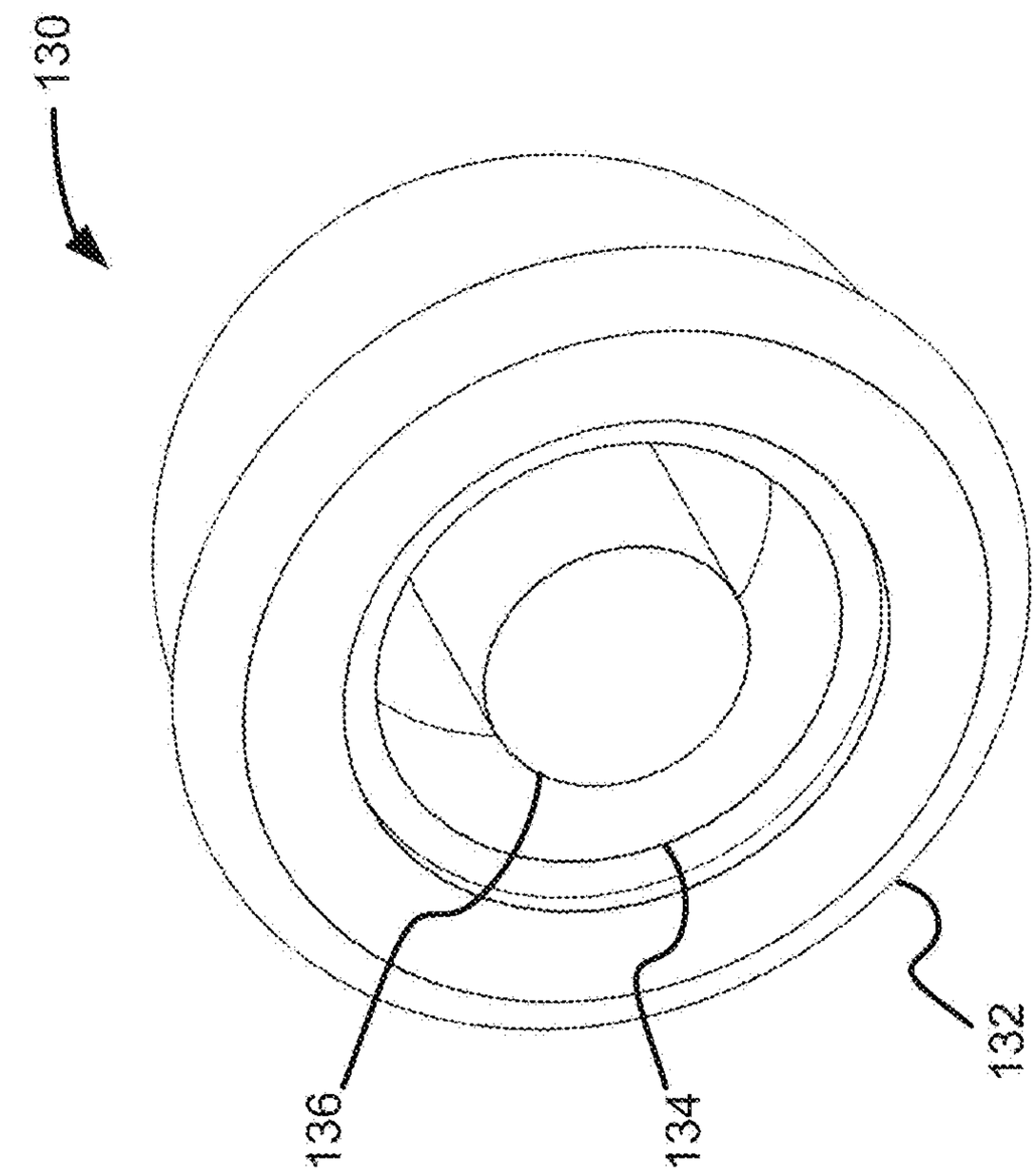

FIG. 4B

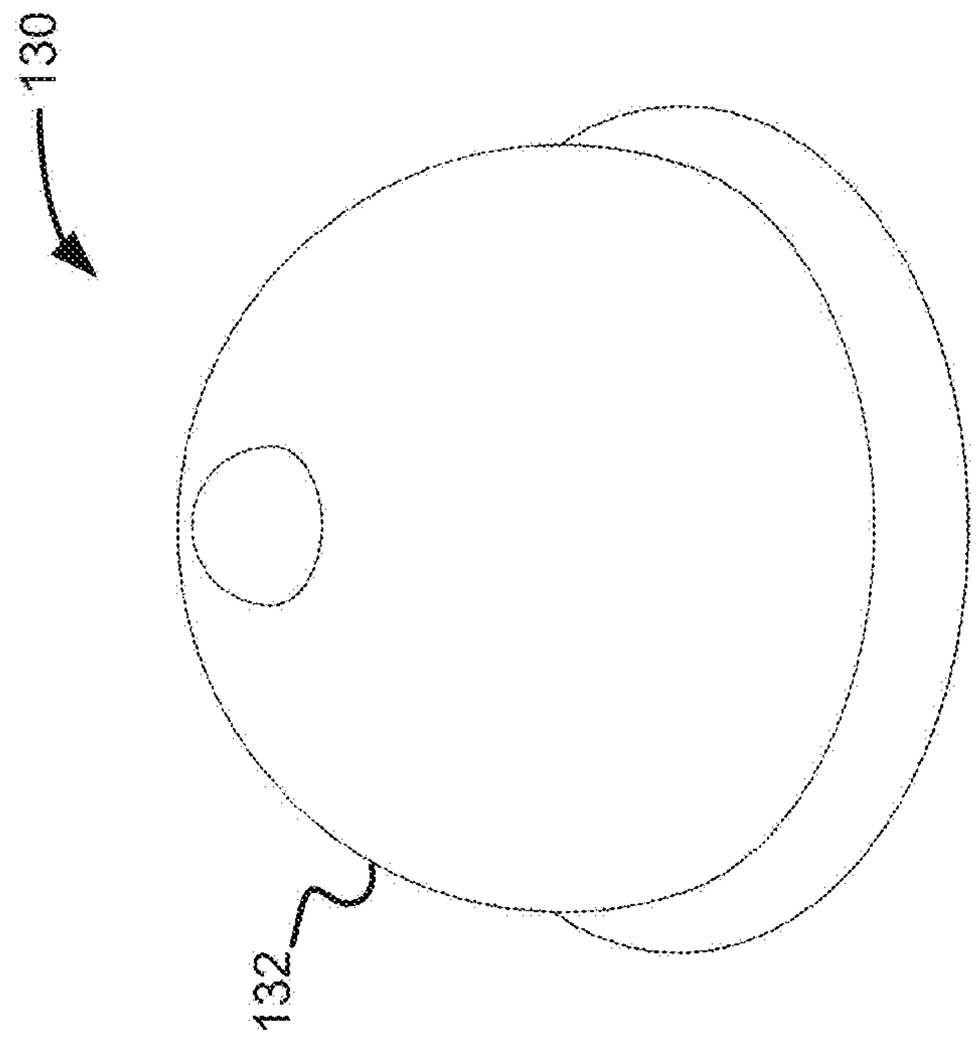

FIG. 4A

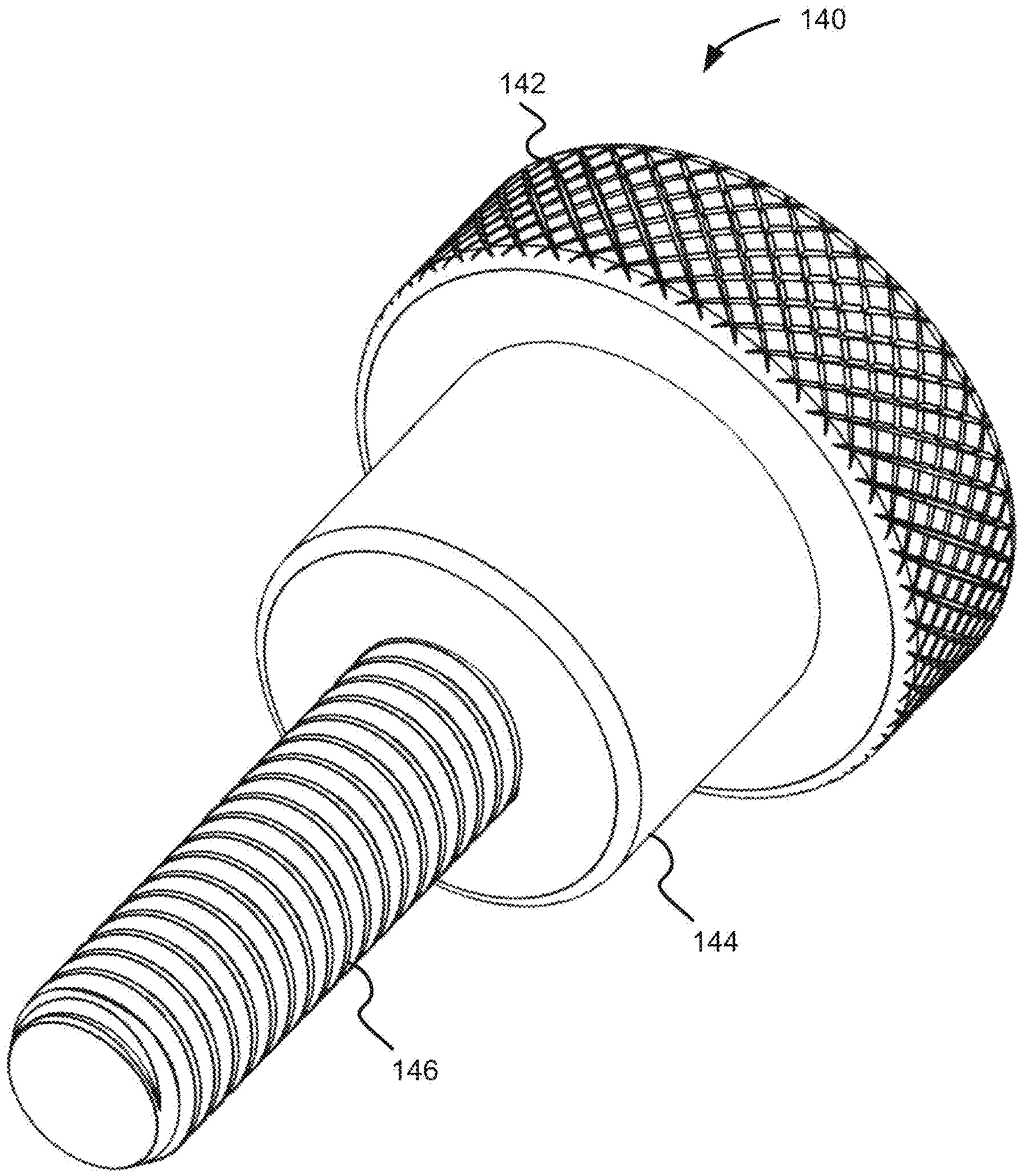

FIG. 5

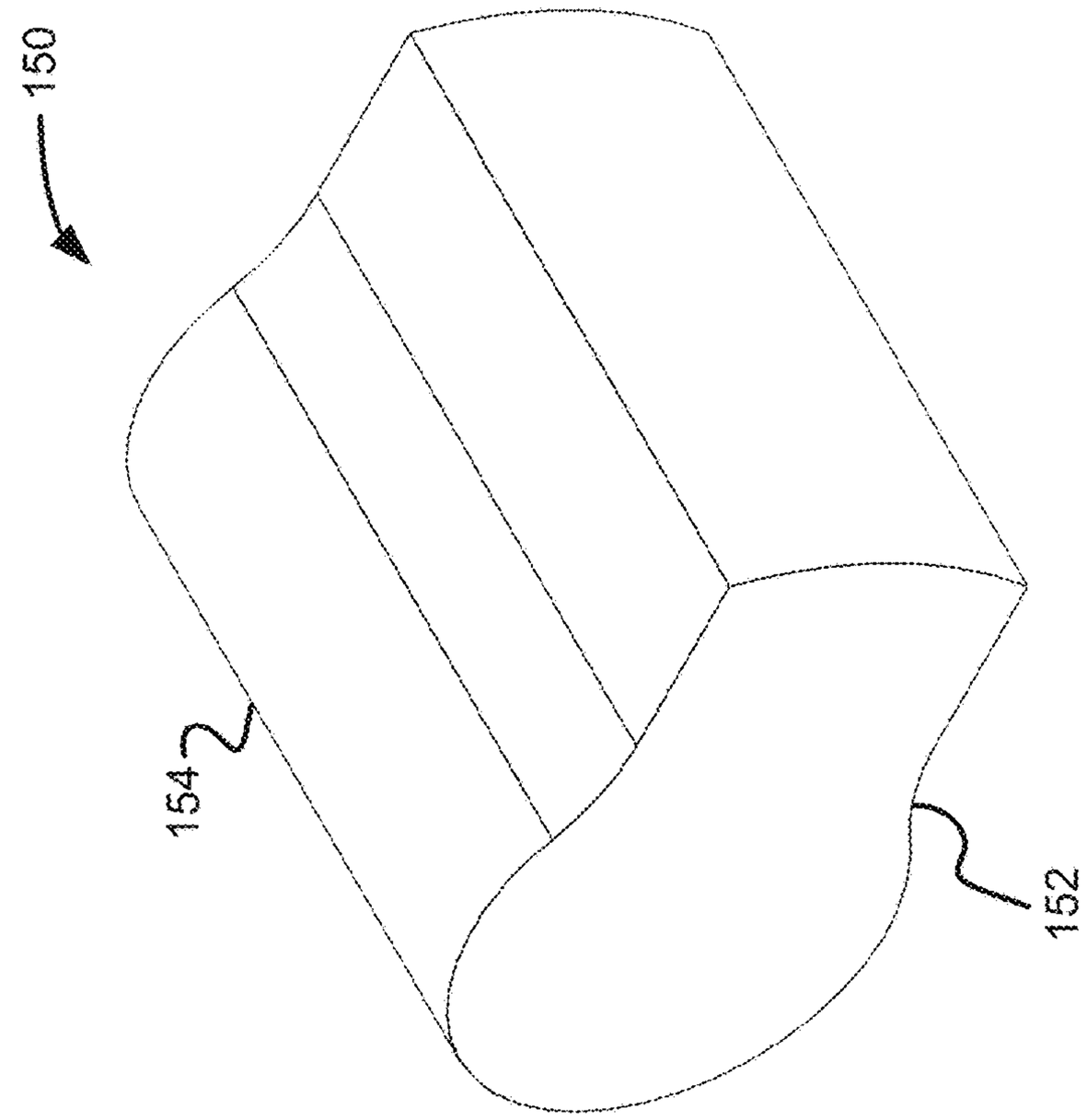

FIG. 6B

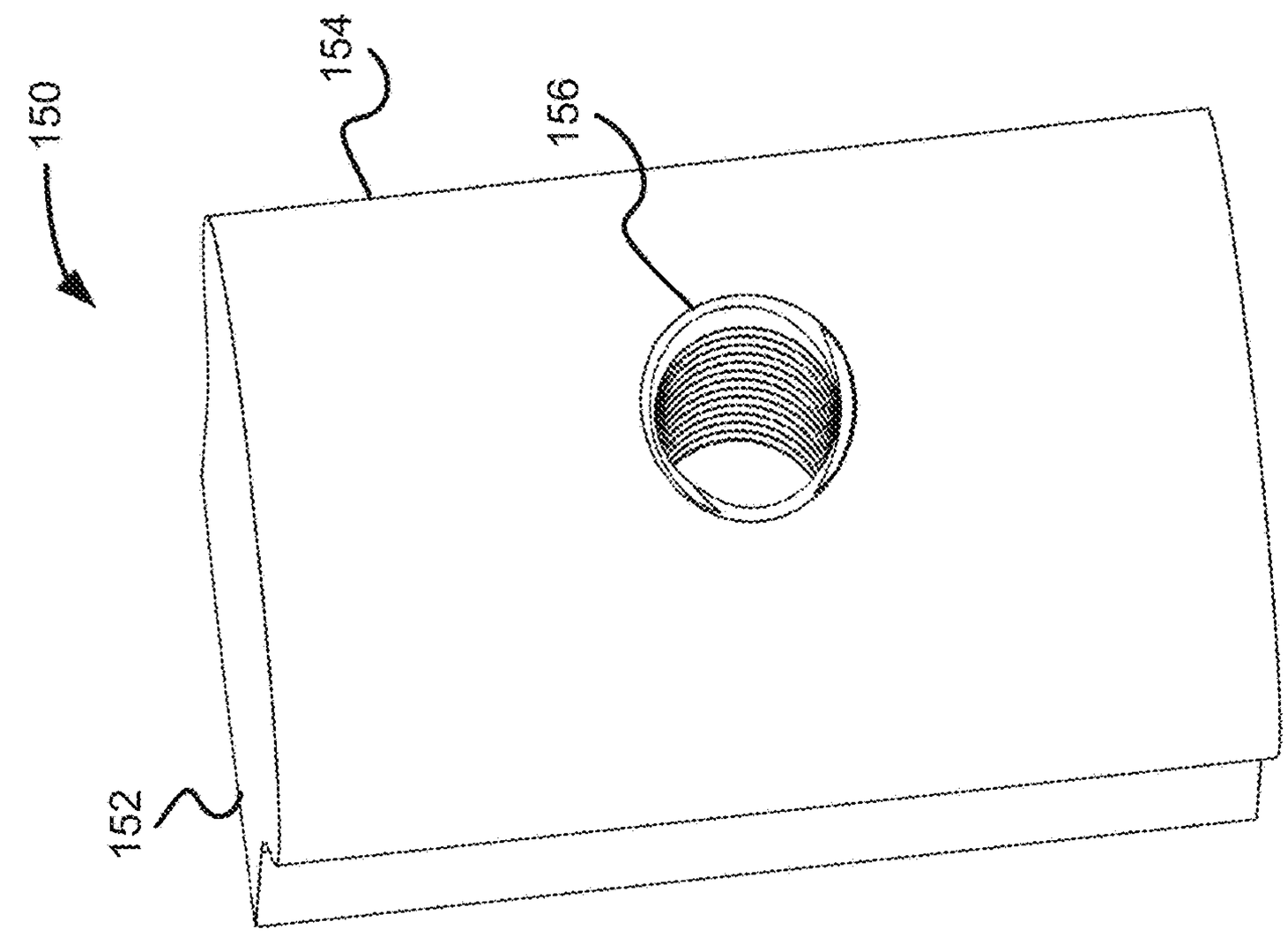

FIG. 6A

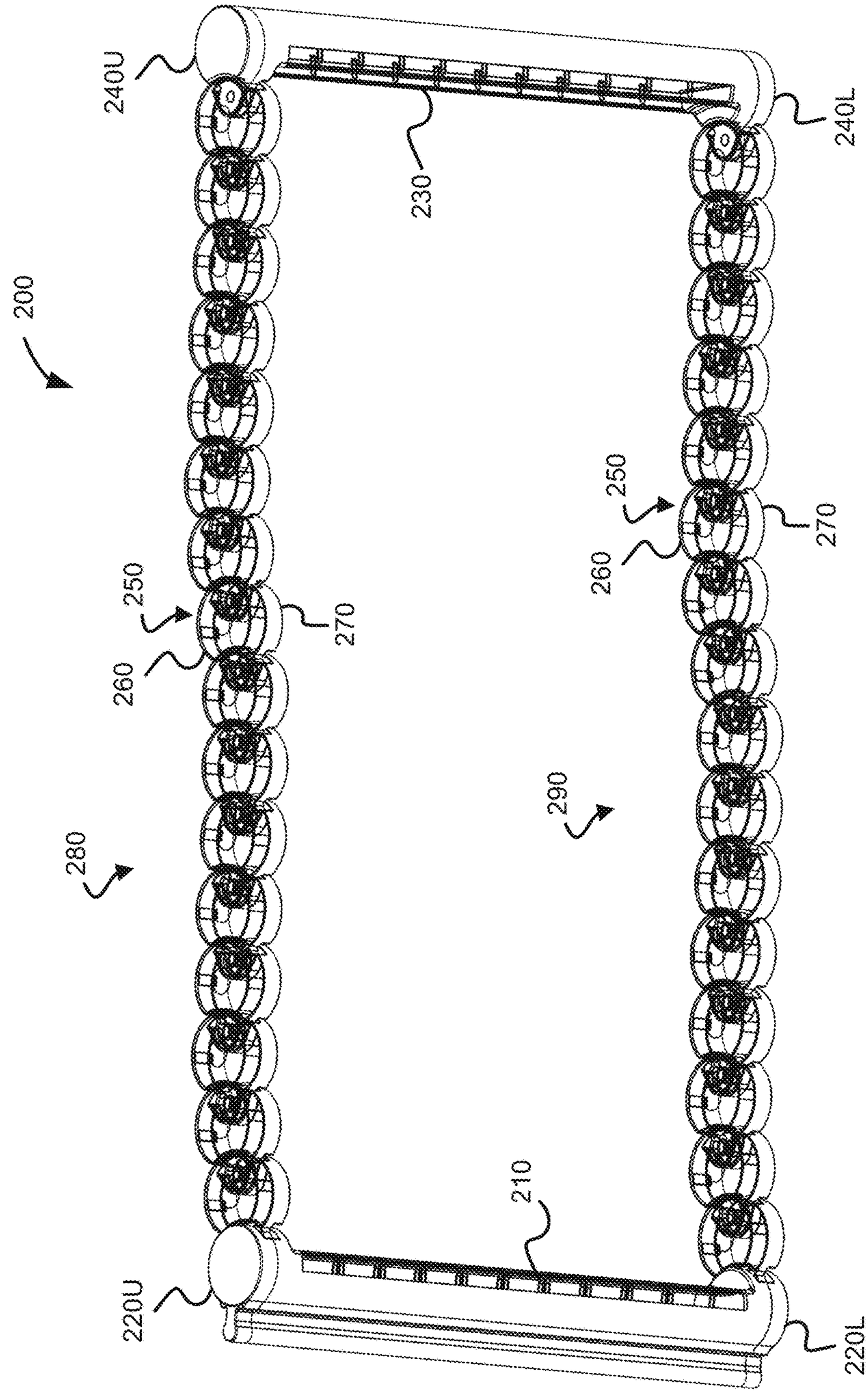

FIG. 7

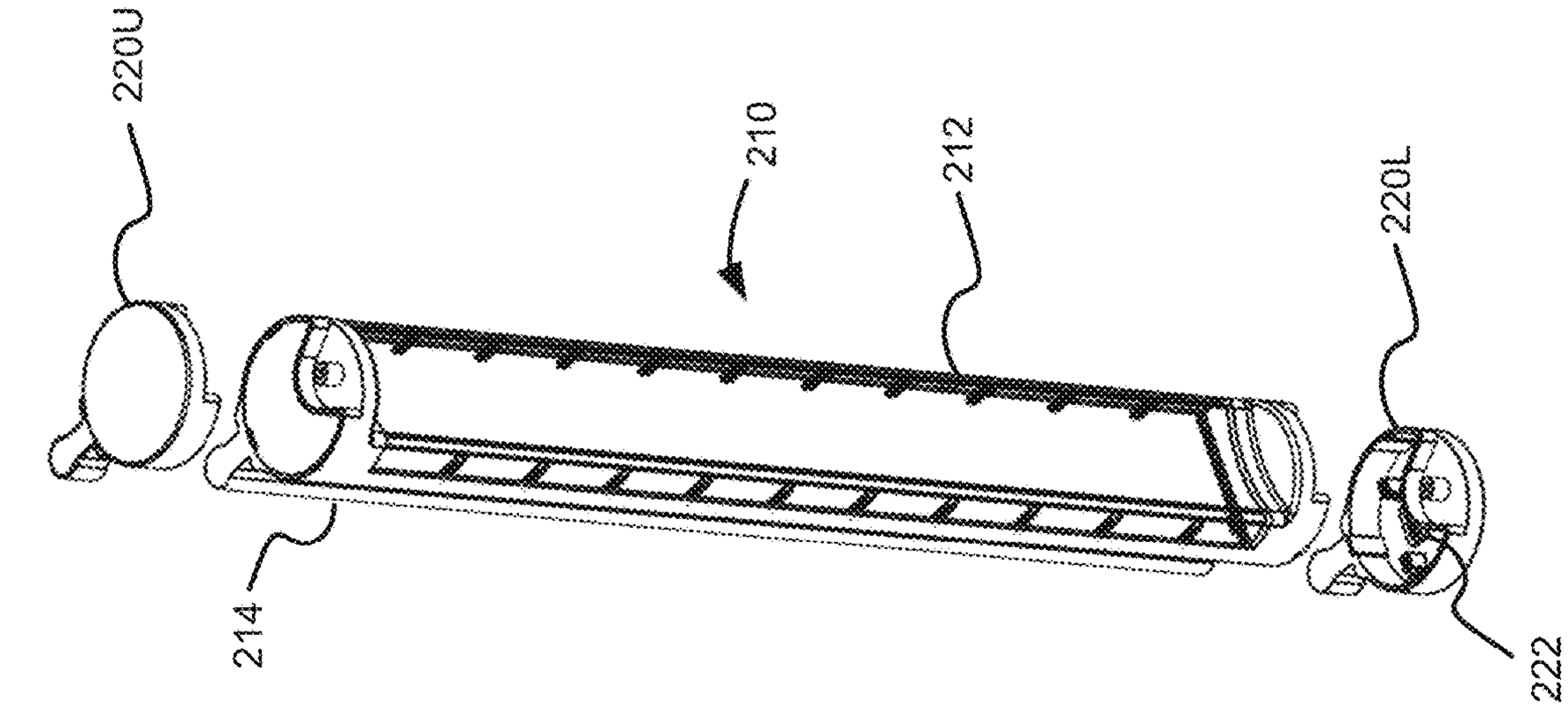

FIG. 8B

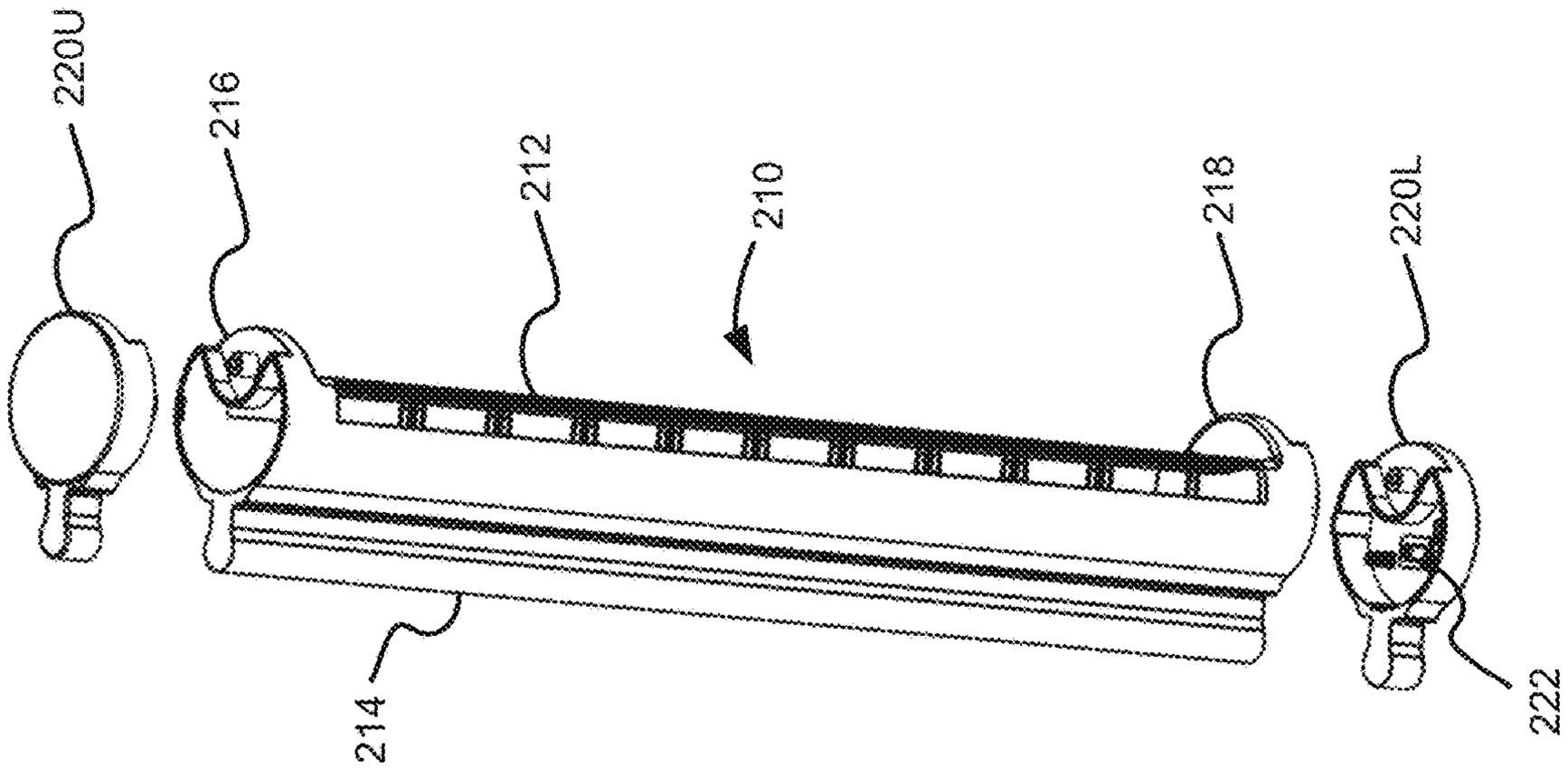

FIG. 8A

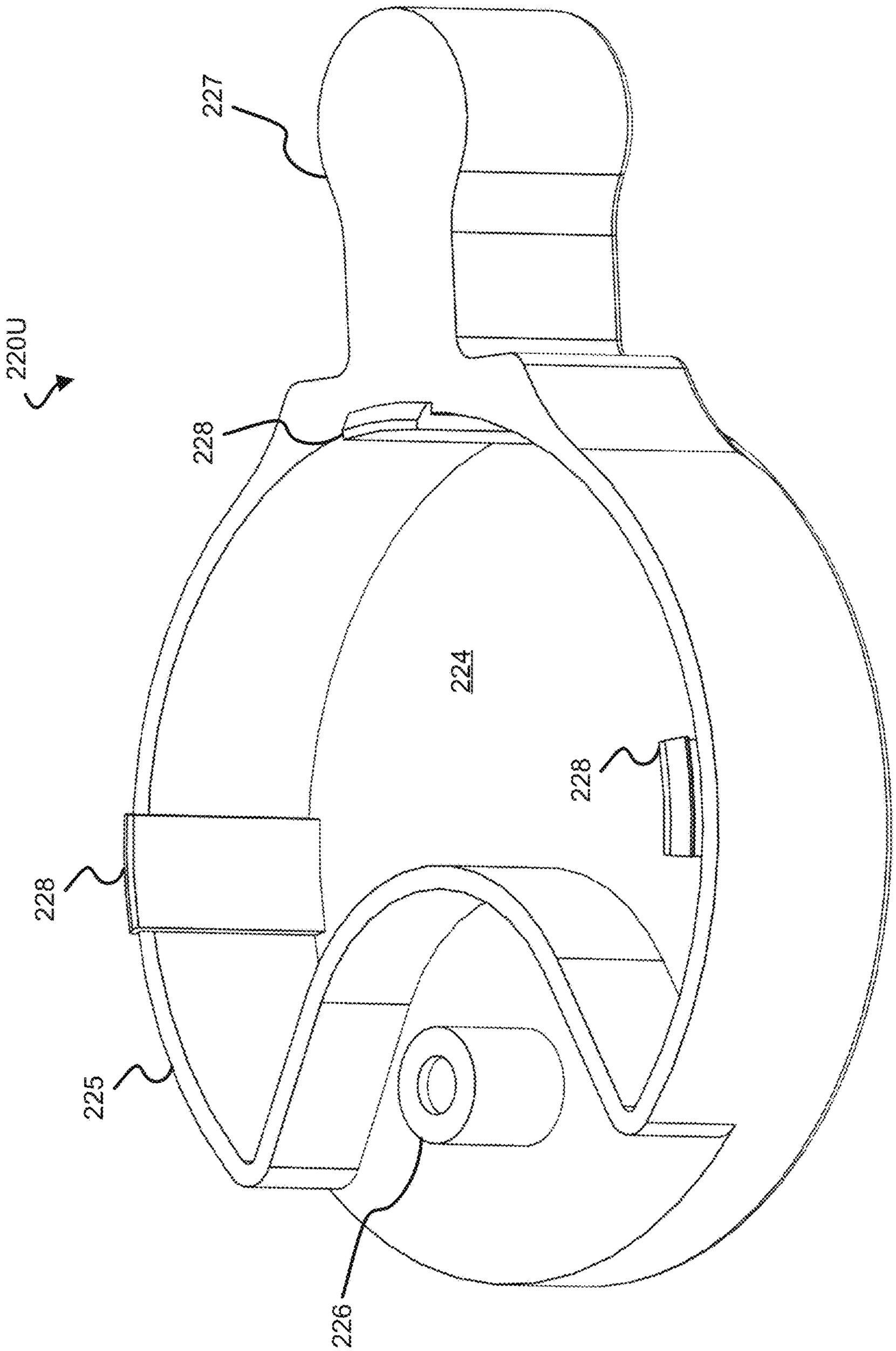

FIG. 9A

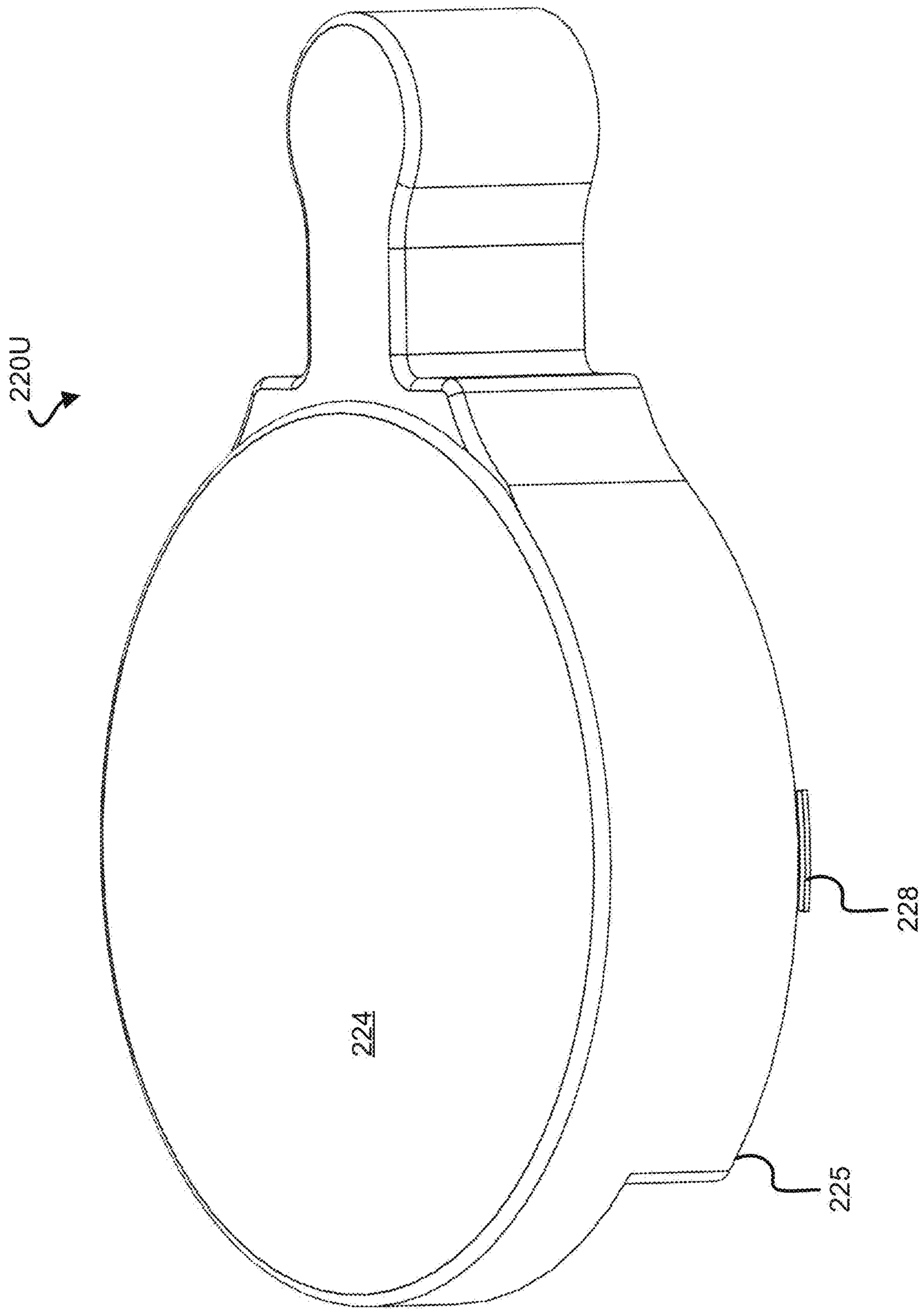

FIG. 9B

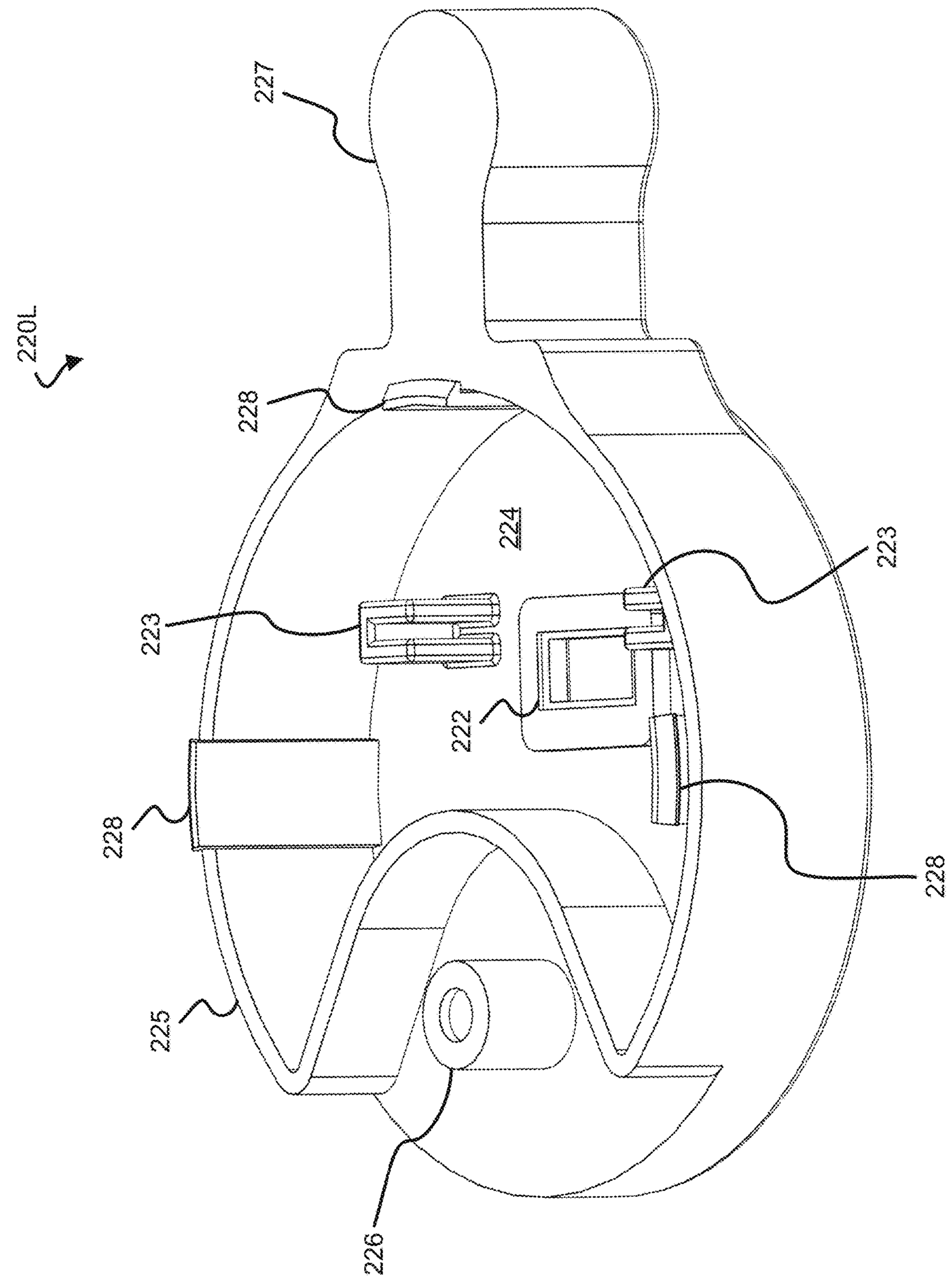

FIG. 10A

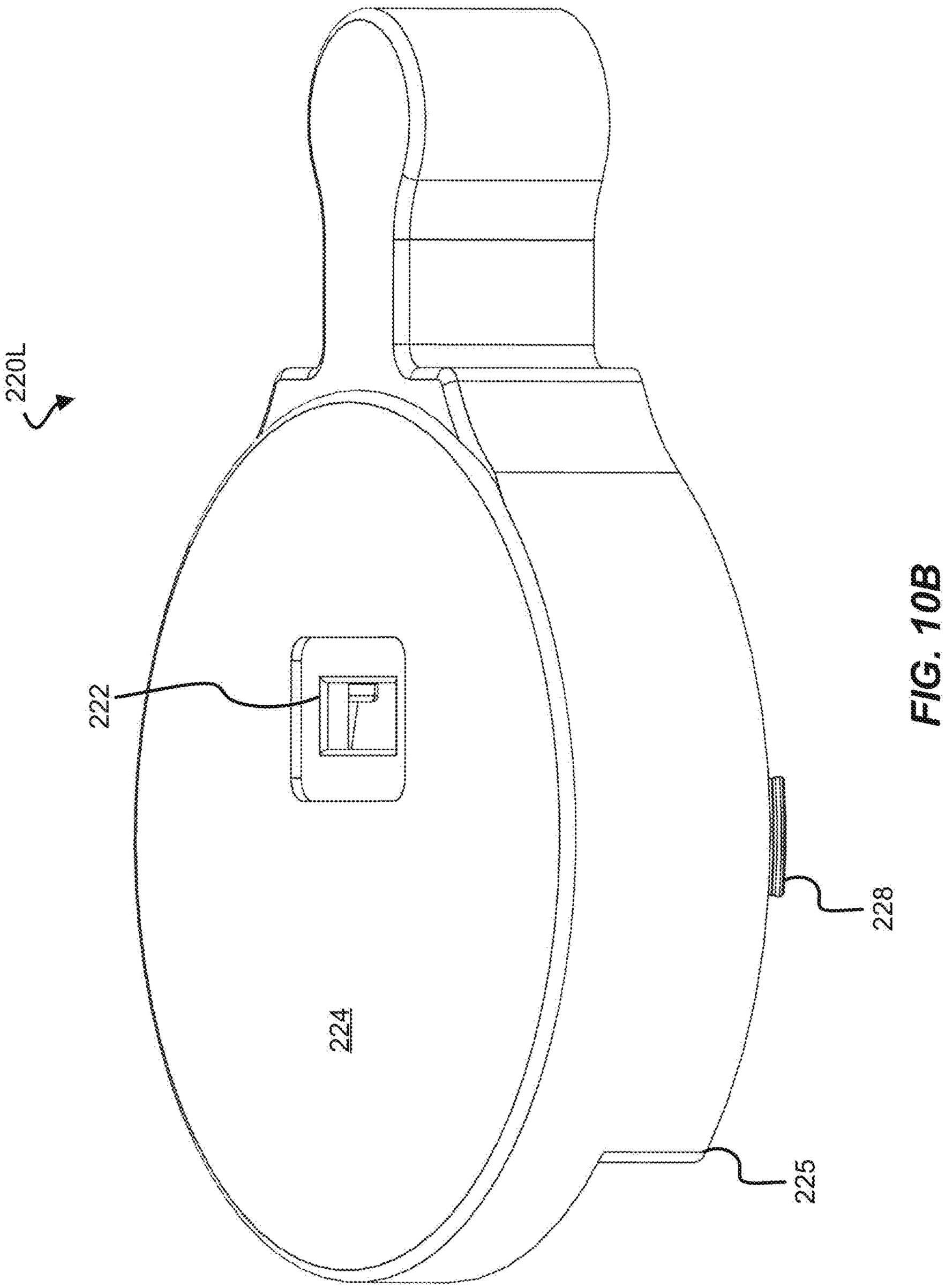

FIG. 10B

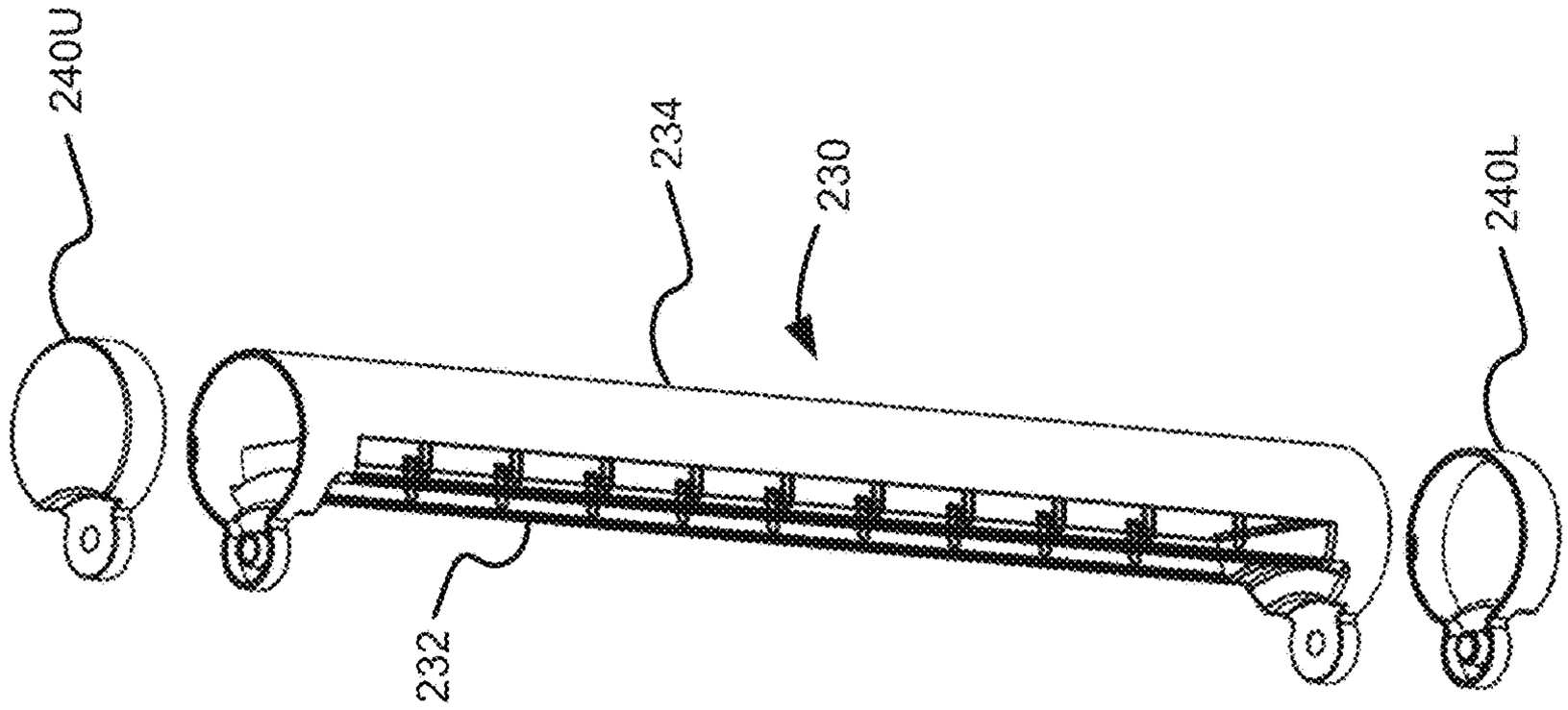

FIG. 11B

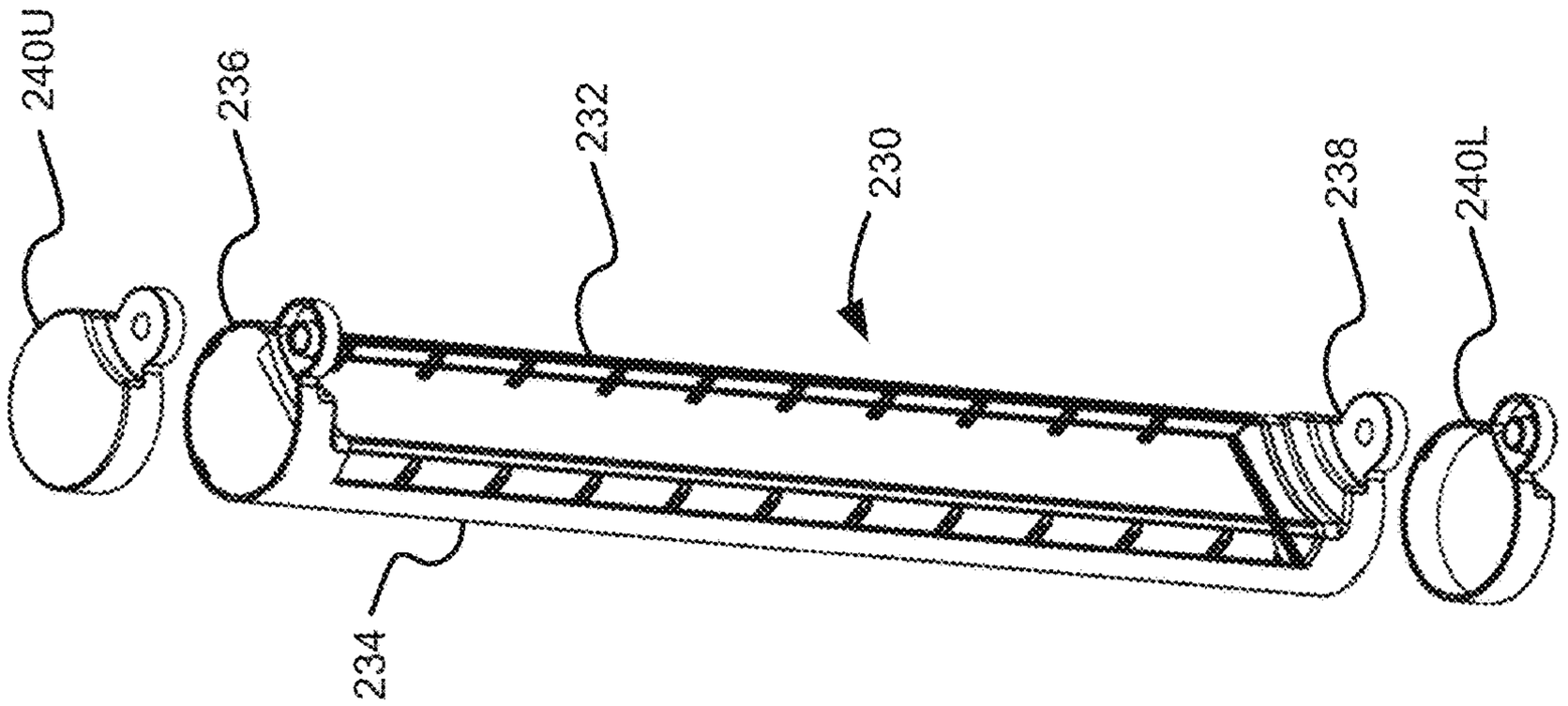

FIG. 11A

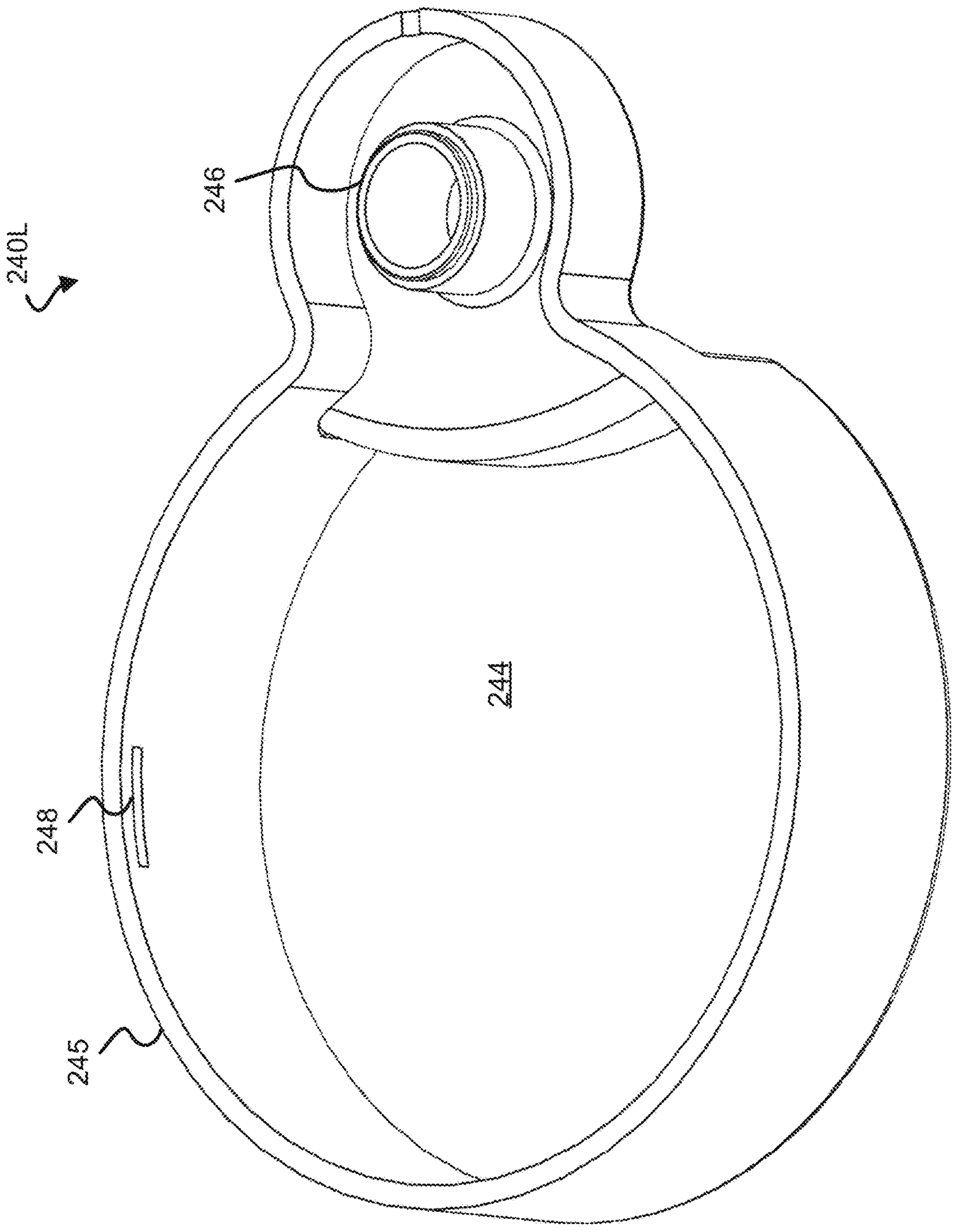

FIG. 12A

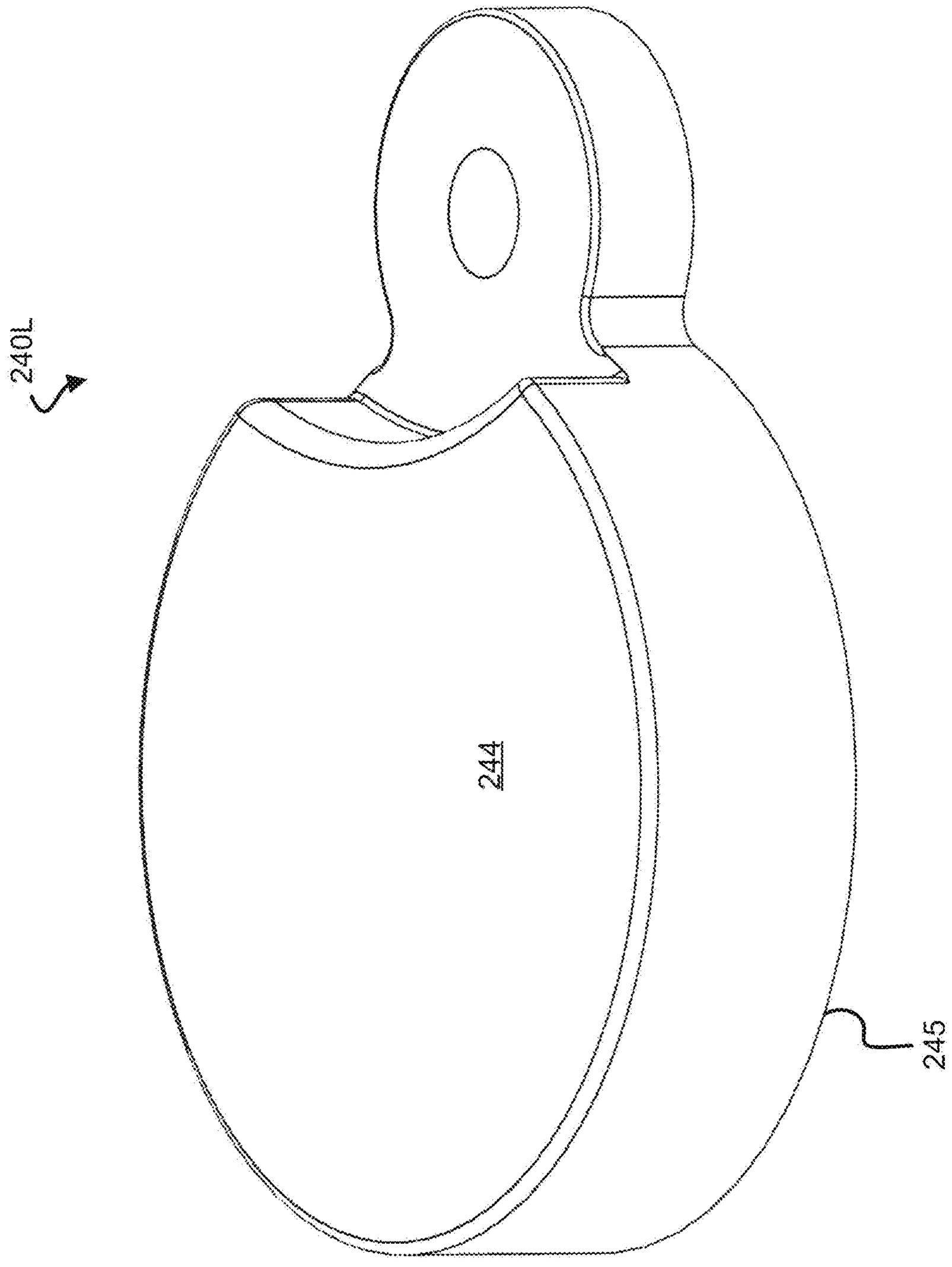

FIG. 12B

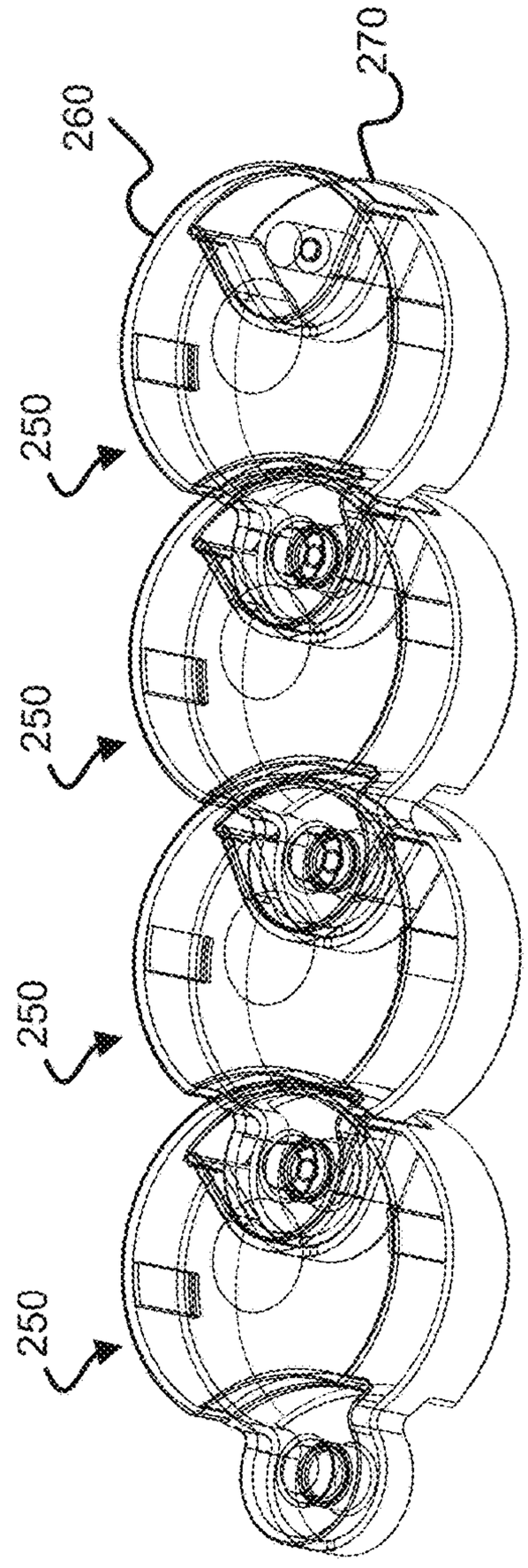

FIG. 13A

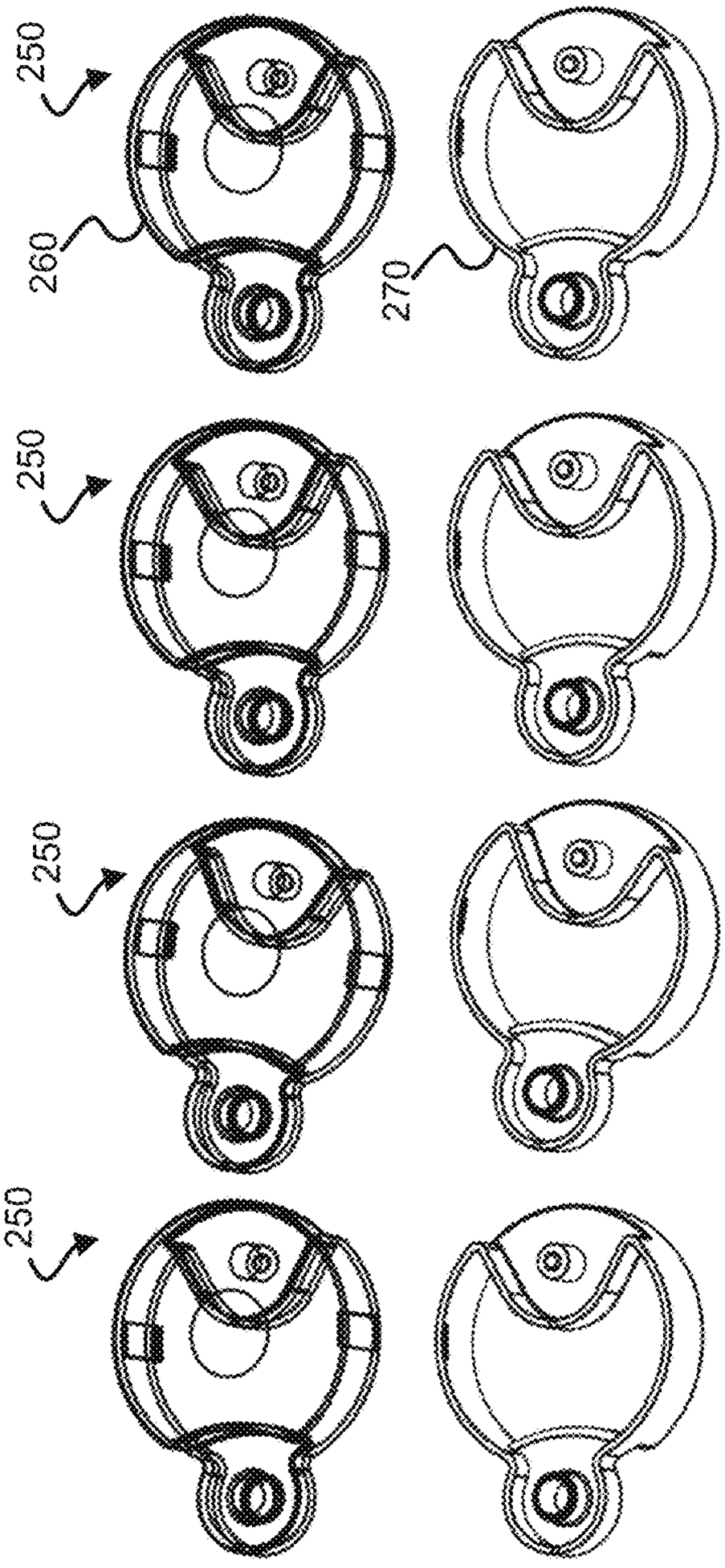

FIG. 13B

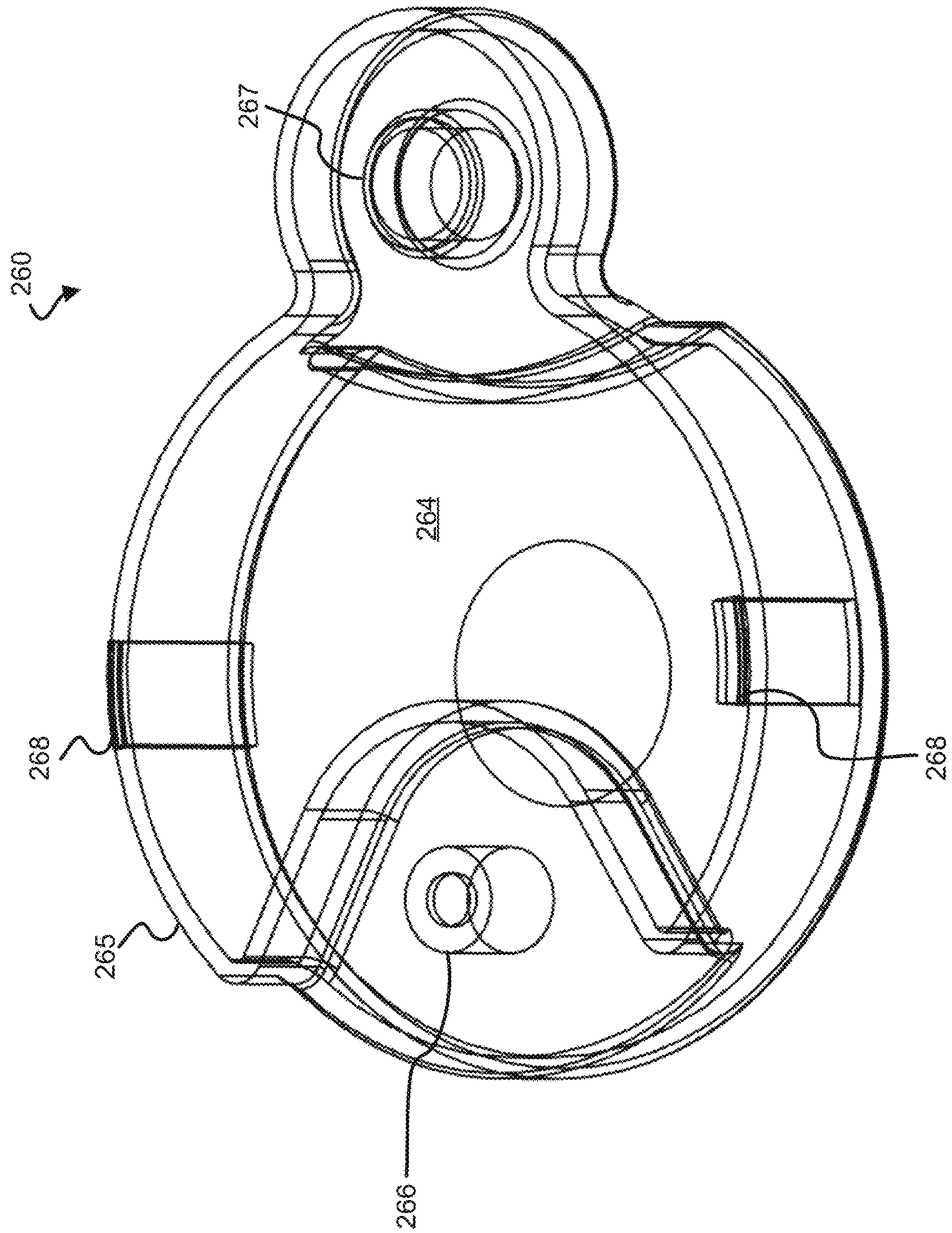

FIG. 14A

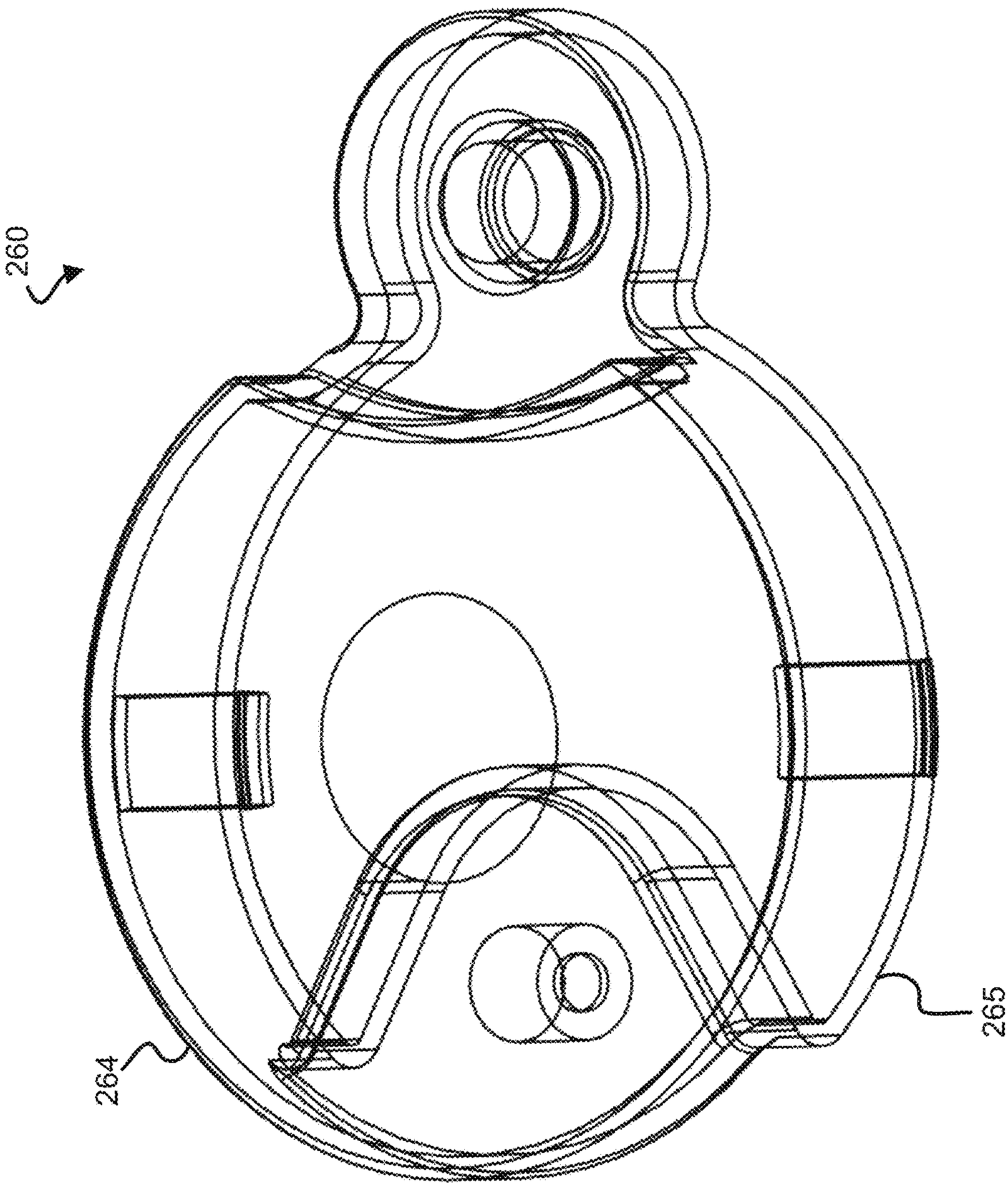

FIG. 14B

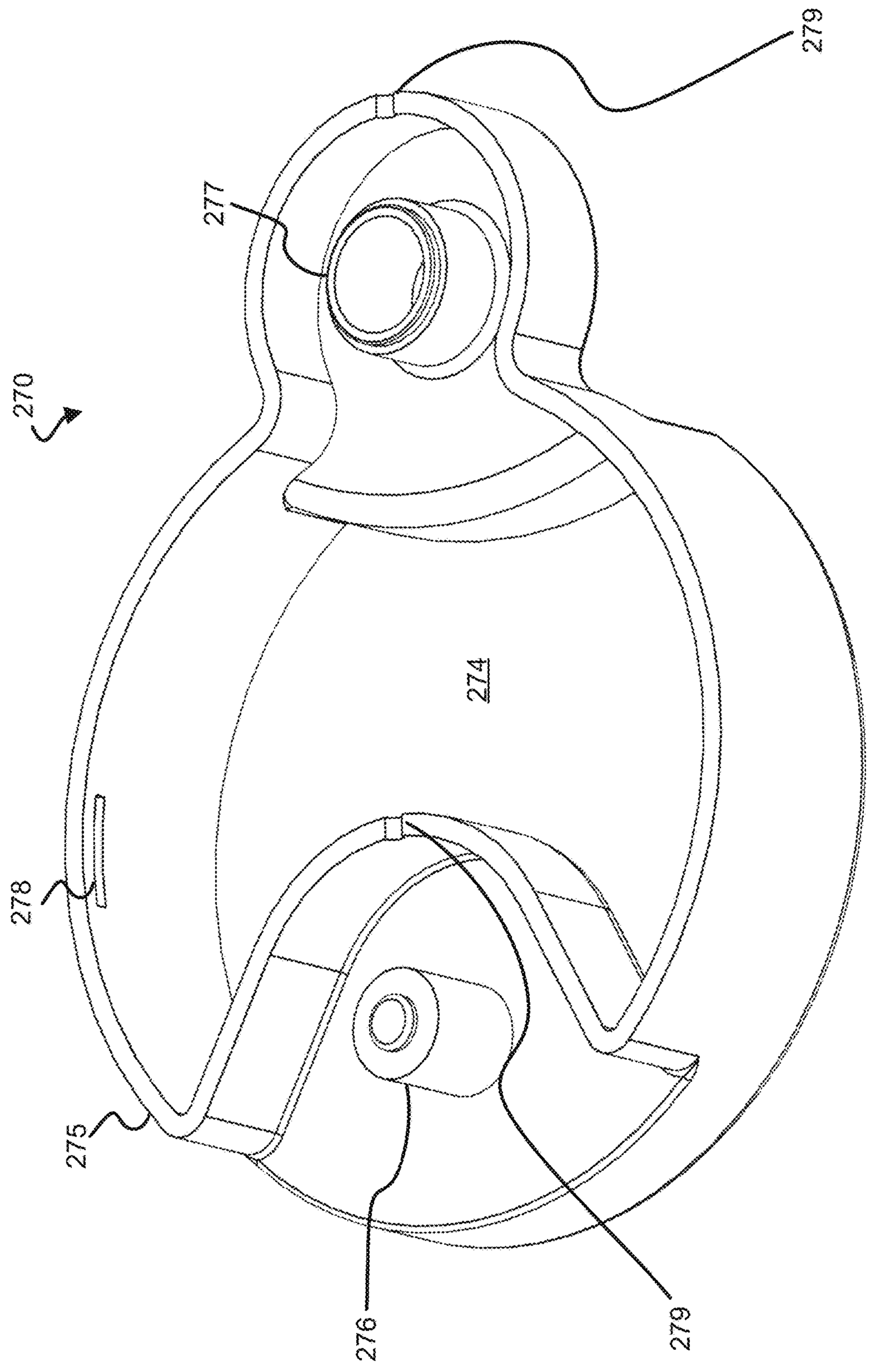

FIG. 15A

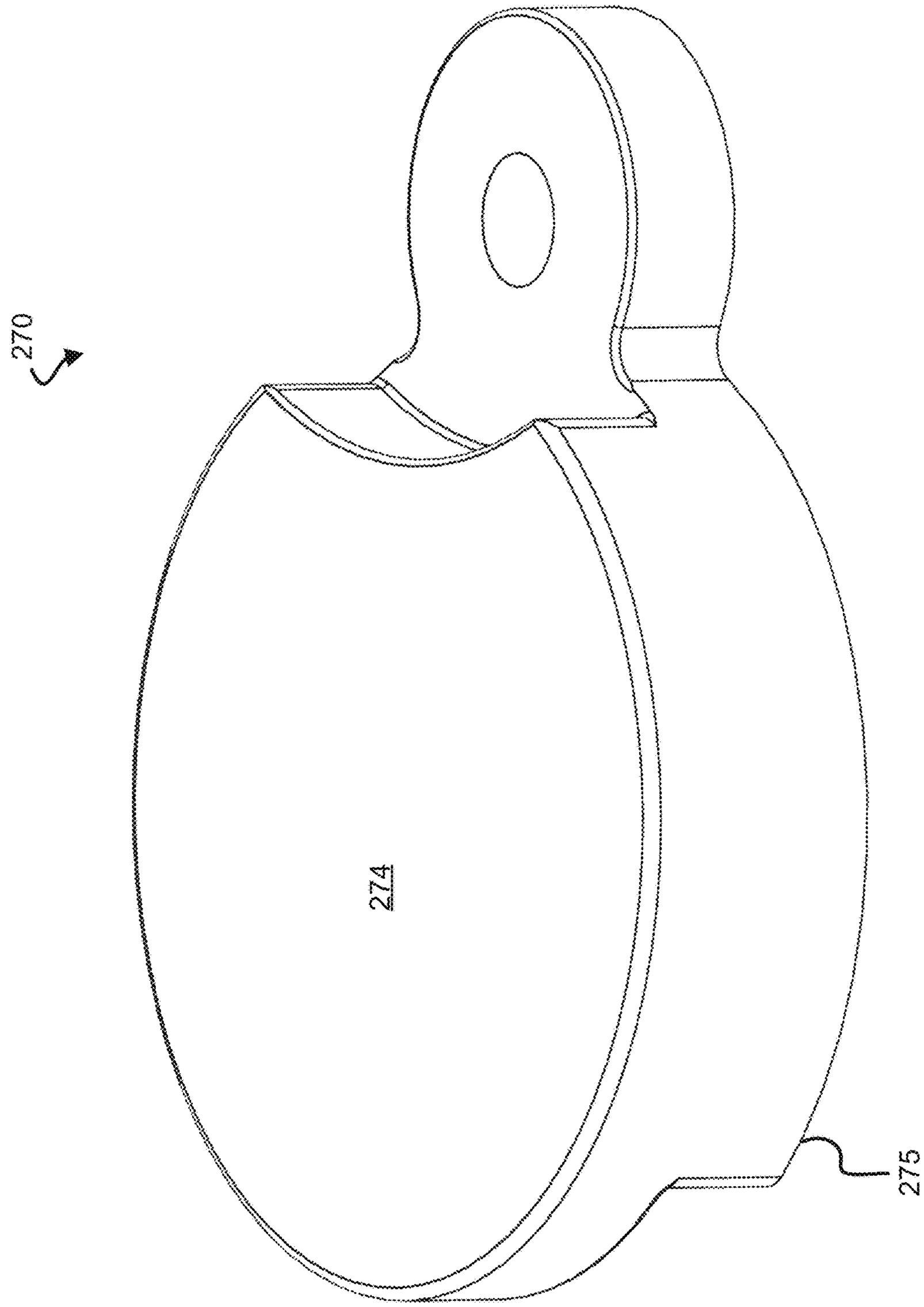

FIG. 15B

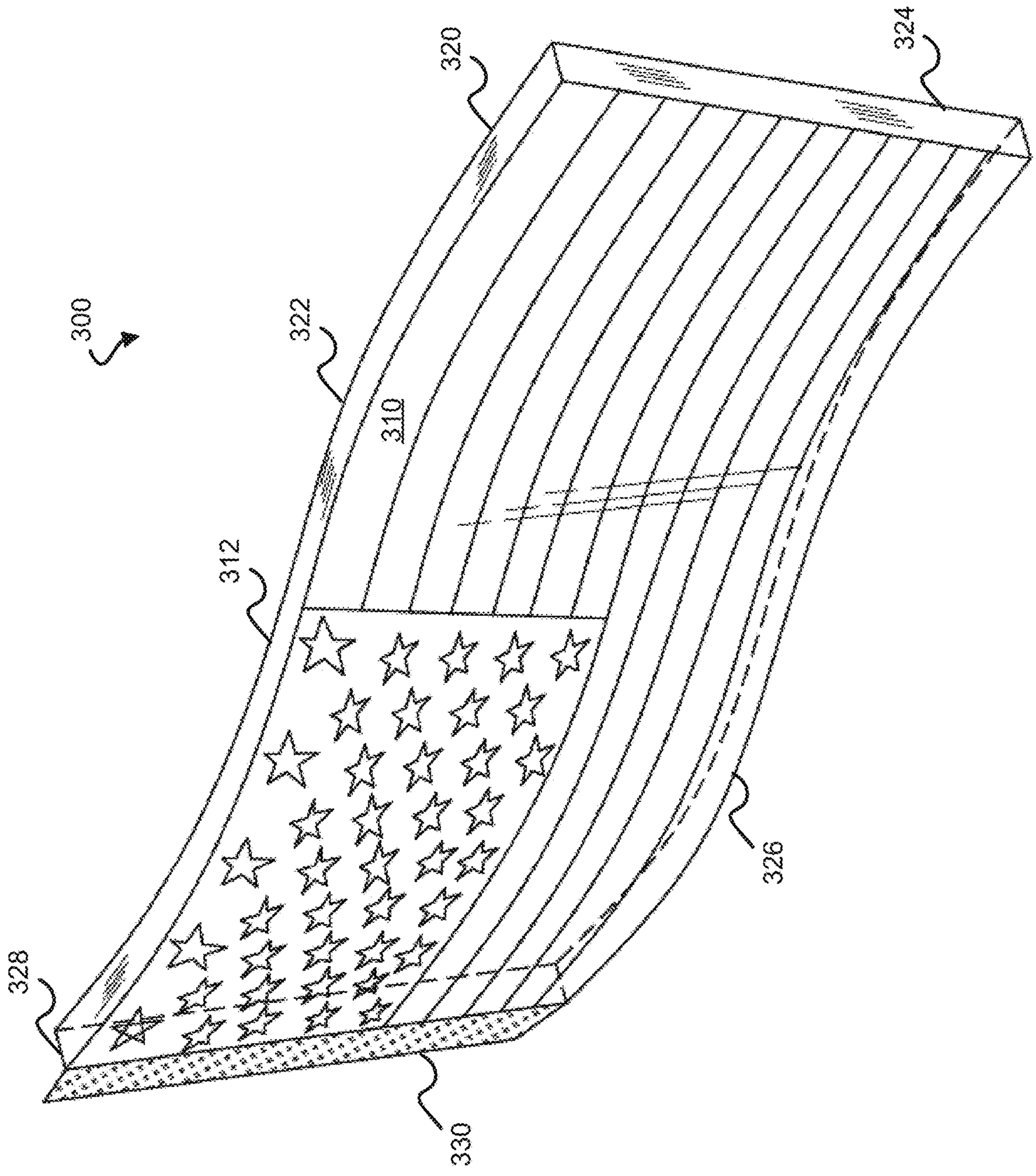

FIG. 16A

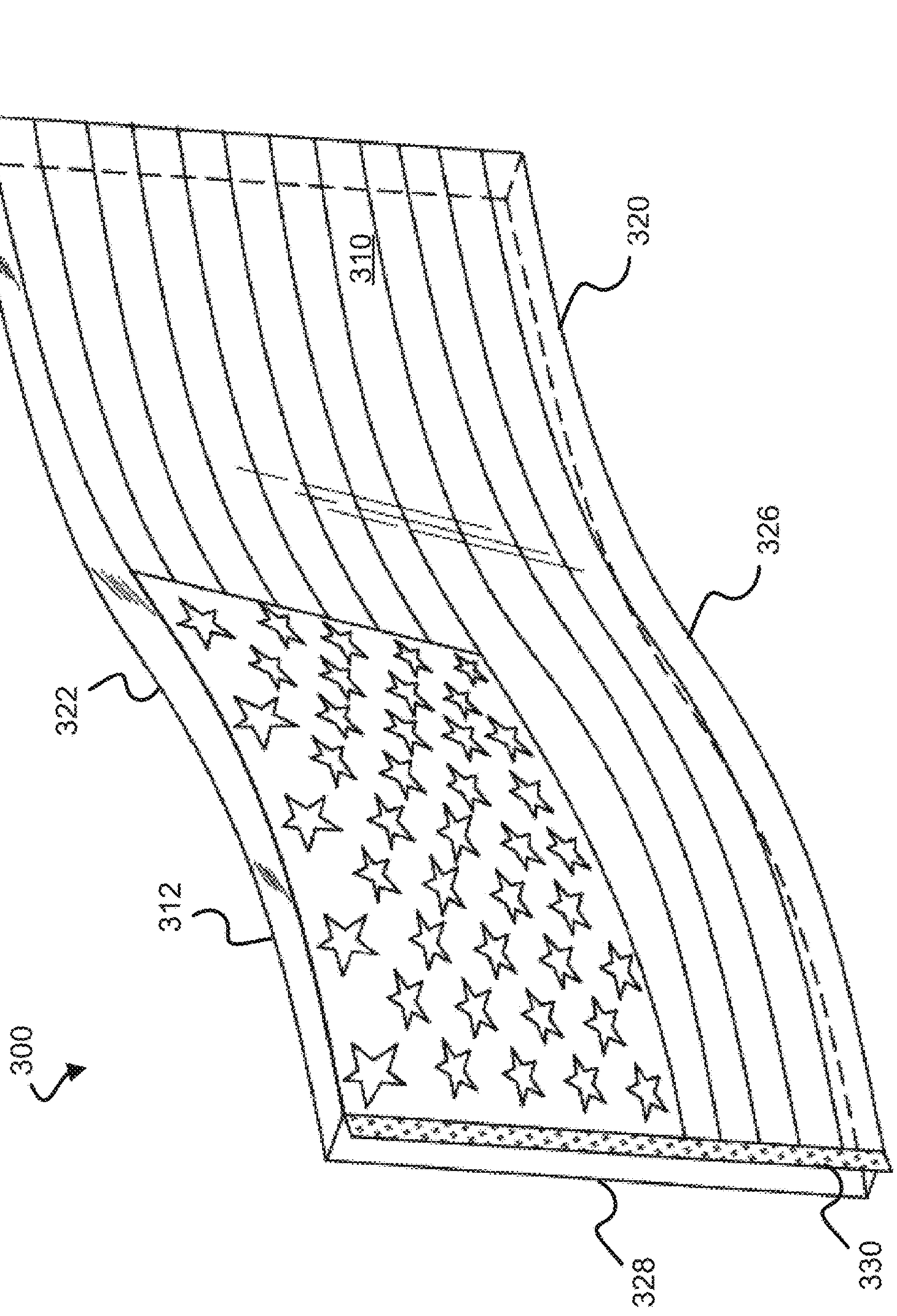

FIG. 16B

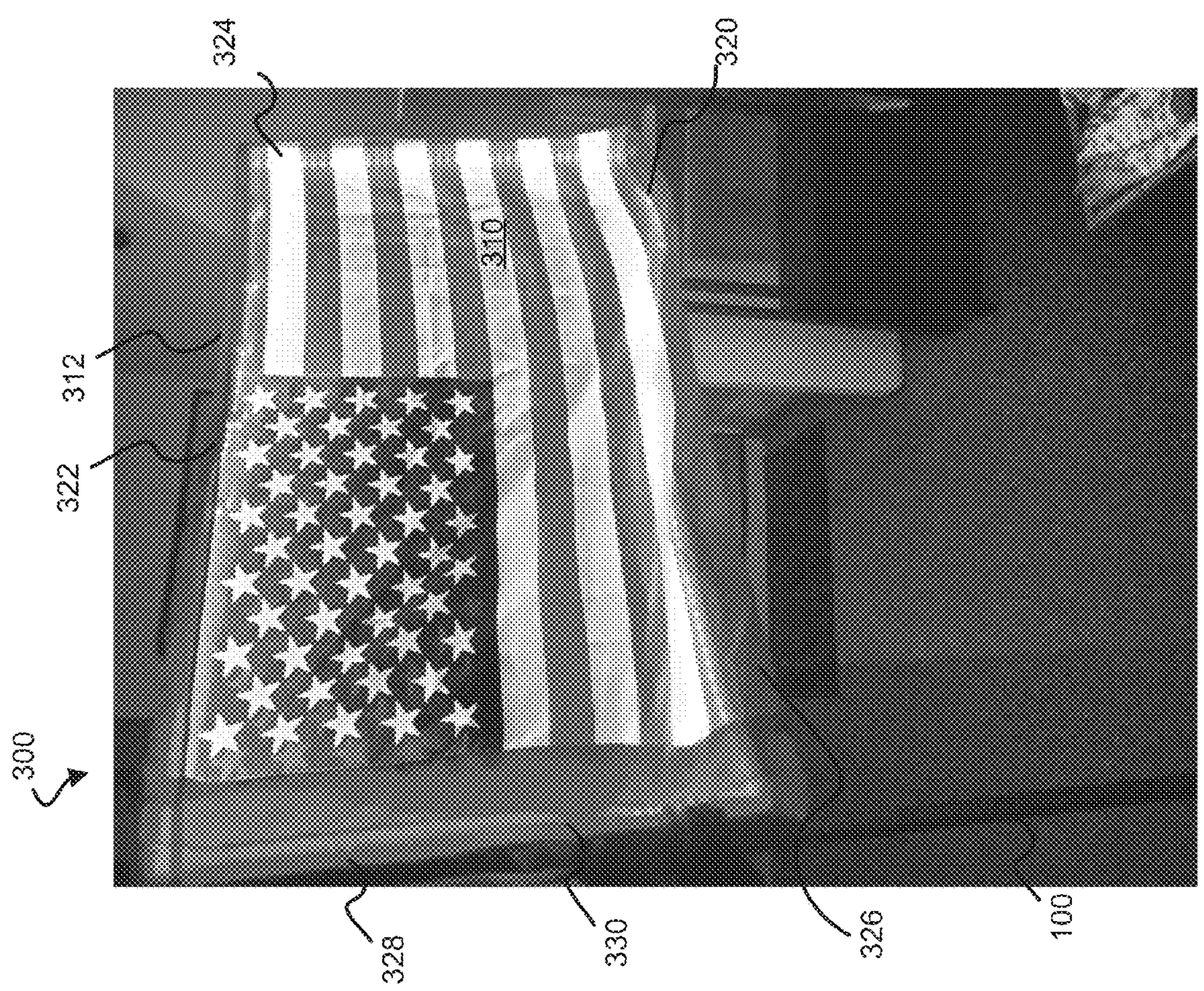

FIG. 17

ILLUMINATED FLAGPOLE ASSEMBLIES AND FLAG MOUNTING SYSTEMS

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation of, and claims priority under 35 U.S.C. § 120 to, U.S. patent application Ser. No. 17/487,759, filed Sep. 28, 2021, the entire contents of which are fully incorporated herein by reference.

FIELD OF INVENTION

Examples of the present disclosure relate to systems and devices for providing an illuminated flagpole assembly. More particularly, an illuminated flagpole and flag frame system are disclosed herein.

BACKGROUND

Many consumers and businesses use flags mounted on flagpoles for a variety of reasons, including advertising, promotions, displaying sports team flags, national flags, and/or state flags. A known drawback of traditional flagpole assemblies is the lack of visibility of a mounted flags in low light conditions, such as at night.

Accordingly, there is a need for systems and devices for providing an illuminated flagpole assembly. Examples of the present disclosure are directed to this and to other considerations.

SUMMARY

Examples of the present disclosure relate to systems and devices for providing an illuminated flagpole assembly.

Consistent with the disclosed embodiments, various systems and devices are disclosed. In one aspect, an illuminated flagpole assembly is disclosed. The flagpole assembly may include a flag frame, which may include a hoist end member, a fly end member, an upper cross member, and a lower cross member. The hoist end member may be configured to be selectively attached to a flagpole. The fly end member may be aligned in parallel with and opposite to the hoist end member. The upper cross member may be formed by a first plurality of links. Each of the first plurality of links may be connected to and configured to swivel relative to one or more adjacent links of the first plurality of links. The first plurality of links may be aligned along a first plane. A first link may of the first plurality of links may be connected to the hoist end member and a second link of the first plurality of links may be connected to the fly end member. Each link of the first plurality of links may include a housing. The flag frame may additionally include a first plurality of light elements. Each of the first plurality of light elements may have at least a portion of each respective light element in a housing of a respective link of the first plurality of links. The lower cross member may be formed by a second plurality of links. Each link of the second plurality of links may be connected to and configured to swivel relative to one or more adjacent links of the second plurality of links. The second plurality of links may be aligned along a second plane that is parallel to the first plane. A first link of the second plurality of links may be connected to the hoist end member and a second link of the second plurality of links may be connected to the fly end member. Each of the second plurality of links may include a housing. The flag frame may additionally include a second plurality of light elements. Each of the second plurality of light elements may have at least a portion of each respective light element in a housing of a respective link of the second plurality of links.

In another aspect, an illuminated flagpole assembly is disclosed. The illuminated flagpole assembly may include a flag frame, and the flag frame may include a hoist end member, a fly end member, an upper cross member, a first plurality of light elements, a lower cross member, and a second plurality of light elements. The fly end member may be positioned opposite the hoist end member. The upper cross member may be attachable to the hoist end member at a first end and to the fly end member at a second end. The upper cross member may be formed by a first plurality of links that may be aligned along a first plane. Each of the first plurality of links may be attachable and configured to rotate in the first plane relative to one or more adjacent links of the first plurality of links. The first plurality of light elements may each be attachable to a respective link of the first plurality of links. The lower cross member may be attachable to the hoist end member at a first end and to the fly end member at a second end. The lower cross member may be formed by a second plurality of links which may be aligned along a second plane that is parallel to the first plane. Each of the second plurality of links may be attachable and configured to rotate in the second plane relative to one or more adjacent links of the second plurality of links. The second plurality of light elements may each be attachable to a respective link of the second plurality of links.

In another aspect, an illuminated flagpole assembly is disclosed. The illuminated flagpole assembly may include a flag frame, and the flag frame may include a hoist end member, a fly end member, an upper cross member, a first plurality of light elements, a lower cross member, and a second plurality of light elements. The fly end member may be positioned opposite the hoist end member. The upper cross member may be attachable to the hoist end member at a first end and to the fly end member at a second end. The upper cross member may include a first plurality of links. The first plurality of links may each be connected to one or more adjacent links of the first plurality of links. The first plurality of links may be aligned along a first plane and configured to swivel with respect to one or more adjacent links of the first plurality of links. The first plurality of light elements may each be attachable to a respective link of the first plurality of links. The lower cross member may be attachable to the hoist end member at a first end and to the fly end member at a second end. The lower cross member may include a second a plurality of links. The second plurality of links may each be connected to one or more adjacent links of the second plurality of links. The second plurality of links may be aligned along a second plane parallel to the first plane and configured to swivel with respect to one or more adjacent links of the second plurality of links. The second plurality of light elements may each be attachable to a respective link of the second plurality of links.

Further features of the disclosed design, and the advantages offered thereby, are explained in greater detail hereinafter with reference to specific examples illustrated in the accompanying drawings, wherein like elements are indicated be like reference designators.

BRIEF DESCRIPTION OF THE DRAWINGS

Reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, are incorporated into, and constitute a portion of, this disclosure,

illustrate various implementations and aspects of the disclosed technology and, together with the description, serve to explain the principles of the disclosed technology. In the drawings:

FIG. **1** is front perspective view of an exemplary flagpole assembly, in accordance with some examples of the present disclosure;

FIGS. **2**A-**2**B show an exemplary flagpole in a front isometric view (FIG. **2**A) and an exploded view (FIG. **2**B), in accordance with some examples of the present disclosure;

FIGS. **3**A-**3**B show an extension section and an attachment section of the exemplary flagpole of FIGS. **2**A-**2**B in more detail, with FIG. **3**A providing a back view of the extension and attachment sections and FIG. **3**B providing a front isometric view of the attachment section;

FIGS. **4**A-**4**B show an exemplary flagpole cap in a front perspective view (FIG. **4**A) and a bottom isometric view (FIG. **4**B), in accordance with some examples of the present disclosure;

FIG. **5** shows an isometric view of a shoulder bolt, in accordance with some examples of the present disclosure;

FIGS. **6**A-**6**B show an exemplary slide fastener in a front perspective view (FIG. **2**A) and a top isometric view (FIG. **2**B), in accordance with some examples of the present disclosure;

FIG. **7** shows a perspective view of an exemplary flag frame, in accordance with some examples of the present disclosure;

FIGS. **8**A-**8**B show side (FIG. **8**A) and front (FIG. **8**A) exploded views of an exemplary hoist end member of the flag frame of FIG. **7**, in accordance with some examples of the present disclosure;

FIGS. **9**A-**9**B show bottom (FIG. **9**A) and top (FIG. **9**B) perspective views of an upper hoist end cap of the hoist end member of FIGS. **8**A-**8**B, in accordance with some examples of the present disclosure;

FIGS. **10**A-**10**B show top (FIG. **10**A) and bottom (FIG. **10**B) perspective views of a lower hoist end cap of the hoist end member of FIGS. **8**A-**8**B, in accordance with some examples of the present disclosure;

FIGS. **11**A-**11**B show front (FIG. **11**A) and side (FIG. **11**A) exploded views of an exemplary fly end member of the flag frame of FIG. **7**, in accordance with some examples of the present disclosure;

FIGS. **12**A-**12**B show top (FIG. **12**A) and bottom (FIG. **12**B) perspective views of a lower fly end cap of the fly end member of FIGS. **11**A-**11**B, in accordance with some examples of the present disclosure;

FIGS. **13**A-**13**B show perspective views of a plurality of swivel links that are connected (FIG. **13**A) and exploded (FIG. **13**B), in accordance with some examples of the present disclosure;

FIGS. **14**A-**14**B show bottom (FIG. **14**A) and top (FIG. **14**B) perspective views of an upper housing of a swivel link of FIGS. **13**A-**13**B, in accordance with some examples of the present disclosure;

FIGS. **15**A-**15**B show top (FIG. **15**A) and bottom (FIG. **15**B) perspective views of a lower housing of a swivel link of FIGS. **13**A-**13**B, in accordance with some examples of the present disclosure;

FIGS. **16**A-**16**B show left front (FIG. **16**A) and right front (FIG. **16**B) isometric views of an exemplary flag that may be attached to the flag frame of FIG. **7**, in accordance with some examples of the present disclosure; and

FIG. **17** shows a photograph of an exemplary flag that may be attached to the flag frame of FIG. **7**, in accordance with some examples of the present disclosure.

DETAILED DESCRIPTION

Some implementations of the disclosed technology will be described more fully with reference to the accompanying drawings. This disclosed technology, however, may be embodied in many different forms and should not be construed as limited to the implementations set forth herein. The components described hereinafter as making up various elements of the disclosed technology are intended to be illustrative and not restrictive. Many suitable components that could perform the same or similar functions as components described herein are intended to be embraced within the scope of the disclosed systems and devices. Such other components not described herein may include, but are not limited to, for example, components developed after development of the disclosed technology. Wherever convenient, the same references numbers will be used throughout the drawings to refer to the same or like parts.

FIG. **1** is an illustration of an exemplary flagpole assembly **10**. The flagpole assembly **10** may include a flagpole **100** and a flag frame **200**. The flagpole **100** and flag frame **200** may be made of a metal, such as steel or aluminum. In some embodiments, the flagpole **100** and flag frame **200** may be of a composite construction, and certain components may be constructed of plastic, as will be described below. The flagpole **100** may include an attachment section **110** and an extension section **120**, as described in more detail with respect to FIGS. **2**A-**3**B. As shown in FIG. **1**, the flag frame **200** may be attachable and detachable from the flagpole **100**. As described in more detail with respect to FIGS. **2**A-**2**B and FIGS. **7**-**8**B, flag frame **200** may include a hoist end member having an attachment sleeve **214** that is configured to slot into and be secured to flagpole **100**. As described in more detail with respect to FIG. **7**, flag frame **200** may be constructed of a hoist end member (e.g., hoist end member **210**), and a fly end member (e.g., fly end member **230**). Hoist end member and fly end member may be connected by a plurality of links (e.g., swivel links **250**, as described in more detail with respect to FIG. **7**), across the top of flag frame **200**, and also across the bottom of flag frame **200**. According to some embodiments, each of the plurality of links may include a watertight housing that is capable of swiveling with respect to an adjacent link. Each of the plurality of links may also include one or more lights within the water-tight housing, so that when the flagpole assembly **10** is in an assembled configuration, the lights contained with the watertight housings may illuminate a flag attached to flag frame **200**. Further details of the flagpole assembly will be described with respect to the following figures.

FIGS. **2**A-**2**B are illustrations of flagpole **100**, in accordance with some examples of the present disclosure. FIG. **2**A shows flagpole **100** from a first perspective, and FIG. **2**B shows flagpole **100** from a second perspective rotated approximately 180 degrees with respect to the perspective shown in FIG. **2**A. As shown in FIGS. **2**A-**2**B, flagpole **100** may include an extension section **120** and an attachment section **110**. The extension section **120** may include a tubular body **122** and a tapered region **124** and a bottom end **126** (as shown and described with respect to FIGS. **3**A-**3**B). A cap **130**, which may be an ornament or finial, may be threaded or otherwise attached onto a top portion of the attachment section **110**, and a shoulder bolt **140** and a slide fastener **150** may be at least partially disposed within an inner cavity of the attachment section **110**. The attachment section **110** may be configured to attach to flag frame **200** (as described in more detail with respect to FIGS. **3**A-**3**B). The extension section **120** may be telescoping such that, for example, at

least a portion of it is insertable into the attachment section **110**, thereby allowing a user of the flagpole assembly to quickly and conveniently adjust the height of the flagpole **100** to display a flag at a variety of heights, as desired.

The tubular body **122** of the extension section **120** may be made of any sufficiently strong material, such as aluminum or steel, but may also be made of a high strength composite material, such as Kevlar™ in order to reduce weight while maintaining strength. At a top portion of the tubular body **122** may be disposed a tapered regions **124**. In some embodiments, the tapered region **124** may be threaded in order to provide a convenient means of attachment to the attachment section **110**. In other embodiments, the tapered region **124** may be integral with the attachment section **110**. The tapered region **124** is configured to securely position the flagpole assembly **10** when the flagpole **100** is attached to a piece of furniture, such as a beach chair or table. Tapered region **124** may also be configured to provide a convenient means for a user of flagpole **100** to securely grip flagpole **100** while flagpole assembly **10** is in use. In an alternative example, the tapered region **124** may be non-tapered or contoured to fit another shape (e.g., to a user's hand for improved grip).

The attachment section **110** may include a shoulder bolt **140** and slide fastener **150**. As discussed in more detail with respect to FIGS. **3**A-**3**B, the attachment section **110** may include a rear opening **116** and a front opening **118**. In the example shown, the shoulder bolt **140** may extend through the rear opening **116** and be received by the slide fastener **150**, though it could alternatively extend through the front opening **118** in other embodiments. Slide fastener **150** and shoulder bolt **140** may be used to attach an assembled flag frame **200** to flagpole **100**, thereby forming flagpole assembly **10**. In some examples, the flag frame **200** may form an interference fit such that it snaps or tightly fits into place with sufficient friction to hold it in place relative to the flagpole **100**. The slide fastener **150** and shoulder bolt **140** may provide extra rigidity to hold the flagpole assembly **10** together and optionally provide a locking mechanism to help prevent theft or unwanted disassembly of the flagpole assembly **10** or assembled flag frame **200**. Threaded onto a threaded top end (e.g., threaded top end **112**, described in more detail with respect to FIGS. **3**A-**3**B), is the cap **130**. Cap **130** may attach to the top of the attachment section **110** of flagpole **100**. Cap **130** may ensure that slide fastener **150** cannot slide off the top of attachment section **110** after it is secured to attachment section **110**, and may help prevent moisture from entering the cavity of the attachment section **110**.

Turning to FIGS. **3**A-**3**B, certain components of extension section **120** and attachment section **110** are shown in more detail. The extension section **120** may include a bottom end **126**, which may be configured to be attached to a base or stand (not shown). In some configurations, bottom end **126** may be configured to be securely attached to the ground (e.g., by burying the bottom end **126** into the ground). Attachment section **110** may include a threaded top end **112**, a hollow tubular body **114**, rear opening **116**, and top opening **118**. Threaded top end **112** may be configured to thread onto cap **130** to securely fasten cap **130** to the attachment section **110**. Tubular body **114** may be constructed of any sufficiently strong material, such as a composite, aluminum, steel, etc. Tubular body **114** may include a rear opening **116**, which is configured to receive bolt **140**, and a front opening **118**, which is configured to receive slide fastener **150**. Front opening **118** extends vertically through threaded top end **112**, so that slide fastener **150** can be slide over threaded top end **112** into front opening **118**, whereas rear opening **116** does not extend vertically through threaded top end **112**, so shoulder bolt must be inserted through rear opening and cannot be slide over threaded top end **112**.

FIGS. **4**A-**4**B illustrates cap **130** in more detail, in accordance with some examples of the present disclosure. As shown cap **130** may include an outer body **132**, a rim **134**, and a plug **136**. Outer body **132** is generally weatherproof, and can seal the flagpole **100** from the elements, such as rain, snow, and particulates that could otherwise penetrate to an interior portion of flagpole **100**. As shown in FIG. **4**B, the underside of cap **130** may include rim **134** and plug **136**. Rim **134** may ensure that the cap **130** is seated in the appropriate position with respect to threaded top end **112**, so that cap **130** can effectively seal an interior portion of the flagpole **100**. The plug **136** of cap **130** is configured to create a tight seal against threaded top end **112** of attachment section **110** and to properly seat the cap **130** within the attachment section **110** so the threads align. In some embodiments, the threaded top end **112** can be screwed into threads cut into the interior portion of plug **136**, thereby allowing cap **130** to be securely affixed to the attachment section **110**. The cap **130** may be bell-shaped, as shown, or take on other shapes such as a cube or decorative design. Regardless of the outer shape of cap **130**, it may still employ the rim **134** and plug **136** design to help seat and seal the cap **130** to threaded top end **112**.

FIG. **5** illustrates a shoulder bolt **140**, in accordance with some examples of the present disclosure. As described above, the shoulder bolt **140** may be used in tandem with slide fastener **150** to attach a flag frame **200** to the attachment section **110** of flagpole **100**. As shown in FIG. **5**, shoulder bolt **140** can include a knob head **142**, a shoulder **144**, and threading **146**. A user of flagpole assembly **10** can conveniently grip knob head **142** to fasten flag frame **200** to flagpole **100** by threading bolt **140** through rear opening **116** of attachment section **110** and screw bolt **140** into slide fastener **150**, which is first slid through front opening **118** of attachment section **110** before threading bolt **140** into slide fastener **150**. In some embodiments, knob head **142** can include a knurled or textured surface in order to improve the ease of use of shoulder bolt **140** when screwing shoulder bolt **140** into slide fastener **150**. It is also contemplated that knob head **142** may include a compressible material (e.g., rubber or soft plastic) on its shoulder to allow for increased torque, thereby helping to minimize unwanted movement of the hoist end member **210** and, in turn, wear and tear.

FIGS. **6**A-**6**B are illustrations of the slide fastener **150**, in accordance with some examples of the present disclosure. As shown, slide fastener **150** can include end faces **152**, sidewalls **154**, and threaded blind hole **156**. End faces **152** and sidewalls **154** form the slide fastener **150**. Located on one face of slide fastener **150** is threaded blind hole **156**. Threaded blind hole **156** may extend into the body of slide fastener **150**, and may not extend all the way through the body of slide fastener **150** so that threaded blind hole **156** may only be present on one face of slide fastener **150**. To help align slide fastener **150** so the threaded blind hole **156** faces the proper direction to receive shoulder bolt **140**, its end faces **152** may be shaped to fit within the cavity of the attachment section **110** in a single alignment as shown in FIG. **6**B.

FIG. **7** is an illustration of flag frame **200**, in accordance with some examples of the present disclosure. As shown, flag frame **200** can include a hoist end member **210**, fly end member **230**, upper cross member **280**, lower cross member **290**, upper hoist end cap **220**U, lower hoist end cap **220**L,

upper fly end cap **240**U, and lower fly end cap **240**L. The hoist end member **210** can be selectively attached to attachment section **110** of flagpole **100**. The fly end member **230** can be aligned in parallel with and opposite to the hoist end member **210**. The upper hoist end cap **220**U can be attached to an upper end of the hoist end member **210** (e.g., upper end **216**, as described in more detail with respect to FIGS. **8**A-**8**B) in order to seal the hoist end member **210** from water, dust, and other elements. The lower hoist end cap **220**L similarly attaches to a lower end of hoist end member **210** in order to seal the hoist end member **210** from water, dust, and other elements. Similarly, upper fly end cap **240**U can be attached to an upper end of fly end member **230** and lower fly end cap **240**L can be attached to a lower end of fly end member **230**, to seal fly end member **230** from the elements.

Upper cross member **280** can be formed from a chain of swivel links **250**. Each swivel link **250** can be constructed of a clear upper housing **260** and an opaque lower housing **270**. In some embodiments, one or more lights can be housed within the body of swivel link, sandwiched in between the clear upper housing **260** and opaque lower housing **270**. Each swivel link **250** can be attached to one or more adjacent swivel link **250**, and swivel links **250** are configured to swivel with respect to adjacent swivel links by approximately 10 degrees in either direction (e.g., into the page or out of the page of FIG. **7**) from a first plane defined by the chain of swivel links **250** that connect an upper end of hoist end member **210** to an upper end of fly end member **230**.

Lower cross member **290** can similarly be formed from a chain of swivel links **250**. The swivel links **250** of lower cross member **290** can similarly swivel with respect to adjacent swivel links by approximately 10 degrees in either direction from a second plane defined by the chain of swivel links **250** that connect a lower end of hoist end member **210** to a lower end of fly end member **230**.

FIGS. **8**A-**8**B are illustrations of a hoist end member of a flag frame, in accordance with some examples of the present disclosure. As shown, hoist end member **210** can include a flag facing cavity **212**, an upper hoist end attachment sleeve **214**, an upper end **216**, and a lower end **218**. The flag facing cavity **212** can be configured to attach to a flag on a first side of the flag. Hoist end attachment sleeve **214** can be configured to slide into hollow tubular body **114** of attachment section **110** to connect flag frame **200** to flagpole **100**. Further, shoulder bolt **140** and slide fastener **150** can be used to maintain the position of flag frame **200** with respect to flagpole **100** once hoist end attachment sleeve **214** is attached to hollow tubular body **114** of attachment section **110**. As described earlier, upper hoist end cap **220**U can securely attach to upper end **216** of hoist end member **210**. Similarly, lower hoist end cap **220**L can securely attach to lower end **218** of hoist end member **210**. Lower hoist end cap **220**L and upper hoist end cap **220**U can seal an interior of hoist end member **210**, thereby providing resistance to moisture, rain, snow, dust, and other elements to flagpole **100**. As shown, lower hoist end cap **220**L can also include opening **222**. Opening **222** can be configured to pass an electrical connector, such as a USB connector, that provides an electrical connection to components of hoist end member **210**. The electrical connector can be used to power one or more lights (not shown) at least partially or fully disposed within flag facing cavity **212**, as well as one or more lights (not shown) at least partially or fully disposed within a cavity of the swivel links **250** collectively forming the upper cross member **280** or lower cross member **290**. For example, there may be a single light disposed within a majority of or substantially occupying (e.g., 80+%) and aligned down a central vertical axis of the flag facing cavity **212**. In another example, there may be two lights aligned in parallel and positioned offset the central vertical axis. Similarly, each of the swivel links **250** may include a single light aligned along a central horizontal axis or two lights aligned in parallel offset the central horizontal axis. The offset pair of lights can help further illuminate both sides of the flag faces. According to some embodiments, the electrical connector can be coupled to a printed circuit board, which can provide instructions via the electrical connector that can allow a user of the flagpole assembly **10** to program the function of the lights of the flagpole assembly **10**. For example, the printed circuit board can provide several different lighting functions, including solid light, flashing light, changing colors, etc. According to some embodiments, the printed circuit board may include a wireless communication chip that can allow a user of the flagpole assembly **10** to customize the lighting functions, by communicating with the printed circuit board over a wireless communication protocol, such as Bluetooth™, Bluetooth low energy (BLE), NFC, WiFi™, etc. In some embodiments, the hoist end member **210** may be further configured to receive one or more stackable links (not shown). Stackable links may be similar to swivel links **250**, except they may be vertically stackable within hoist end member **210** and/or fly end member **230**. As discussed with respect to swivel links **250**, each stackable link may contain a light that is configured to illuminate a flag when attached to flag frame **200**. In another embodiment, a single vertical link or light bar may be used in lieu of stackable links since the stackable links do not need to swivel relative to one another. The single vertical link or light bar and stackable links may house one or more lights as described with respect to the hoist end member **210** and swivel links **250**, respectively.

FIG. **9**A is an illustration of a lower surface of upper hoist end cap **220**U, in accordance with some examples of the present disclosure. As shown, lower surface of upper hoist end cap **220**U can include a baseplate **224**, a sidewall **225**, a plug **226**, a tongue **227**, and clips **228**. The lower surface of upper hoist end cap **220**U can be configured to securely attach to the upper end **216** of hoist end member **210**. For example, plug **226** can be configured to securely fit into (e.g., with an interference fit) with a corresponding socket disposed on the upper end **216** of hoist end member **210**. To further secure upper hoist end cap **220**U to upper end **216** of hoist end member **210**, clips **228** may be provided that securely clip the upper hoist end cap **220**U to the upper end **216**. When attached to upper end **216**, baseplate **224** of upper hoist end cap **220**U may snugly fit against the upper end **216** of hoist end member **210**. Sidewall **225** can define a hollow space of the lower surface of upper hoist end cap **220**U which can interface with upper end **216** when upper hoist end cap **220**U is attached to hoist end member **210**. Tongue **227** of upper hoist end cap **220**U functions in a similar manner to tongue **227** of the hoist end member **210**. For example, tongue **227** can slide into front opening **118** of hollow tubular body **114** of attachment section **110**, thereby securing upper hoist end cap **220**U to flagpole **100**.

FIG. **9**B is an illustration of an upper surface of upper hoist end cap **220**U, in accordance with some examples of the present disclosure. As shown, the upper surface faces outwards (away from) the upper end **216** of hoist end member **210** when upper hoist end cap **220**U is attached to the hoist end member **210**. Baseplate **224** can seal the hoist end member **210** protecting hoist end member from elements such as ice, rain, dust, etc.

FIG. **10**A is an illustration of an upper surface of a lower hoist end cap **220**L, and FIG. **10***b* is an illustration of a lower surface of the lower hoist end cap **220**L, in accordance with some examples of the present disclosure. As shown, lower hoist end cap **220**L can include opening **222**, mounting brackets **223**, baseplate **224**, sidewall **225**, plug **226**, tongue **227**, and clips **228**. Opening **222** is configured to provide an electrical connection, such as a USB connector, to components disposed within the flag frame. According to some embodiments, the lights of flag frame **200** can be powered by batteries, such as a battery (not shown) stored within the lower hoist end cap **220**L, while in other embodiments, the lights of flag frame **200** can be powered by being connected to an electrical grid through wiring that runs through the flag frame **200** and into the base of flagpole **100** through opening **222**. In yet other embodiments, the lights of flag frame **200** can be solar powered and connected to one or more external solar panels (not shown). Mounting brackets **223** of lower hoist end cap **220**L are configured to fit into corresponding grooves of lower end **218** of hoist end member **210**. The functions of baseplate **224**, sidewall **225**, plug **226**, tongue **227**, and clips **228** are substantially similar to those described with respect to upper hoist end cap **220**U, and a full description is omitted here for brevity.

FIGS. **11**A-**11**B are illustrations of a fly end member **230** of a flag frame **200**, in accordance with some examples of the present disclosure. As shown, hoist end member **230** can include flag facing cavity **232**, fly end outer body **234**, upper end **236**, and lower end **238**. Flag facing cavity **232** can be configured to attach to a flag on a second side of the flag, opposite the first side of the flag, as discussed in reference to hoist end member **210**. Fly end outer body **234** defines an outer frame of flag frame **200**. Upper end **236** is configured to securely attach to an upper fly end cap **240**U. Similarly, lower end **238** is configured to securely attach to a lower end cap **240**L. According to some embodiments, fly end member can be configured to house one or more stackable links (not shown). Stackable links can be similar to swivel links **250**, except they may be vertically stackable within hoist end member **210** and/or fly end member **230**. As discussed with respect to swivel links **250**, each stackable link may contain a light that is configured to illuminate a flag when attached to flag frame **200**. Alternatively, a single light may be used in place of stackable links.

FIGS. **12**A-**12**B are illustrations of a lower fly end cap **240**L, in accordance with some examples of the present disclosure, with FIG. **12**A showing an upper surface of lower fly end cap **240**L and FIG. **12**B showing a lower surface of lower fly end cap **240**L. As shown in FIGS. **12**A-**12**B, lower fly end cap **240**L can include baseplate **244**, sidewall **245**, socket **246**, and slots **248**. Baseplate **244** is configured to seal an interior area of fly end member **230** when lower fly end cap **240**L is fastened to lower end **238** of fly end member **230**. Sidewall **245** can define a hollow space of the upper surface of lower fly end cap **240**L which can interface with lower end **238** when upper hoist end cap **220**U is attached to hoist end member **210**. Socket **246** can be configured to snugly fit (e.g., an interference fit) with a corresponding plug located in lower end **238** of fly end member **230**. Slots **248** can be configured to provide a groove for a corresponding clip (not shown) to interface with slot **248**, thereby securing lower fly end cap **240**L to lower end **238** of fly end member **230**. Upper fly end cap **240**U (not shown) may be substantially similar to or an inverted version of at least some of the features of **240**L, and may include similar components of baseplate **244**, sidewall **245**, socket **246**, and slots **248**.

FIGS. **13**A-**13**B are illustrations of a plurality of swivel links **250**, each including an upper housing **260** and a lower housing **270**, in accordance with some examples of the present disclosure. More specifically, FIG. **13**A shows a chain of swivel links **250** attached to one another, while FIG. **13**B shows an exploded view of the chain of swivel links **250**. As shown, each swivel link is constructed of an upper housing **260** and a lower housing **270**. The upper housings **260** can be constructed of a clear or light transmitting material, such as polycarbonate or other plastics. Embodiments with a clear material may help provide easier maintenance while a non-clear or opaque material may help provide a decorative aesthetic if the user does not wish to clearly see individual lights. Lower housing **270** can be generally opaque, light reflective, or light non-transmitting to help amplify the light omitted from upper housings **260**, and can similarly be constructed of polycarbonate or a similar polymer material. Lower housing **260** is described in more detail with respect to FIGS. **14**A-**14**B, and upper housing **270** is described in more detail with respect to FIGS. **15**A-**15**B.

FIGS. **14**A-**14**B are illustrations of an upper housing **260** of a swivel link **250**, in accordance with some examples of the present disclosure. More specifically, FIG. **14**A shows the lower side of upper housing **260**, and FIG. **14**B shows the corresponding upper side of upper housing **260**. As shown in FIGS. **14**A-**14**B, upper housing **260** can include baseplate **264**, sidewall **265**, plug **266**, socket **267**, and clips **268**. Baseplate **264** of upper housing **260** and baseplate **274** (described in more detail with respect to FIGS. **15**A-**15**B) of lower housing **270** can collectively form an interior space of swivel link **250**. Plug **266** is configured to fit into corresponding sockets (e.g., socket **267** of upper housing **260** and socket **277** of a corresponding lower housing **270**) of an adjacent swivel link **250**. Socket **267** is similarly configured to fit a corresponding plug (e.g., plug **266** and plug **276**) of a corresponding adjacent swivel link **250**. Clips **268** are provided to secure the upper housing **260** to its corresponding lower housing **270** to form each swivel link **250**. According to some embodiments, each swivel link **250** is configured to house one or more lights, which can be configured to illuminate a flag when the flag is attached to flag frame **200**. Additionally, each swivel link can swivel with respect to an adjacent swivel by approximately 10 degrees in either direction (for a total of approximately 20 degrees of motion) in one example, or between approximately 5-15 degrees in another example. Additionally, the closest links (e.g., four or five) to the hoist end member **210** may be fixed in rotational alignment such that they do not rotate relative to one another. This helps with the rigidity of the flag frame **200** and helps it from collapsing while still appearing to have natural movement of a typical flag, and helps the flag frame **200** to appear fuller because the shape is better maintained. The swiveling feature of swivel links **250** allows the lights disposed within the upper cross member **280** and lower cross member **290** to mirror the motion of an attached flag as it is blown by wind, thereby continuously illuminating the flag in a consistent manner despite the motion of the flag, which is not possible with traditional illuminated flag systems because lighting from stationary light source(s) in traditional systems changes in intensity with the motion of the flag. Since the flag frame **200** does not sag, it provides consistent lighting over the entire body of the flag.

FIGS. **15**A-**15**B are illustrations of a lower housing **270** of a swivel link **250**, in accordance with some examples of the present disclosure. More specifically, FIG. **15**A shows the

upper side of lower housing **270**, and FIG. **15**B shows the corresponding lower side of lower housing **270**. As shown, lower housing **270** can include baseplate **274**, sidewall **275**, plug **276**, socket **277**, slots **278**, and wire groove **279**. Plug **276** is configured to fit into corresponding sockets (e.g., socket **277** of lower housing **270** and socket **267** of a corresponding upper housing **260**) of an adjacent swivel link **250**. Slots **278** are configured to mate with clips **268** of a corresponding upper housing **260** to form each swivel link **250**. Additionally, each lower housing **270** can include one or more wire grooves **279**. Wire grooves **279** may be found in sidewall **275** and placed such that electrical wires can provide an electrical connection between each adjacent swivel link **250**, thereby providing electrical power to the one or more lights housed within each swivel link **250**. Additionally, in some embodiments, each wire groove **279** may be fitted with a grommet (not shown) in order to protect the electrical wires from physical damage, as well as seal swivel link **250** to be resistant to water, dust, and other elements.

FIGS. **16**A-**16**B are illustrations of flag **300** from various perspectives, in accordance with some examples of the present disclosure. As shown, flag **300** can include front face **310**, rear face **312**, border **320**, and attachment flap **330**. Border **320** can include upper border member **322**, fly end border member **324**, lower border member **326**, and hoist end border member **328**. Flag **300** can be attached to flag facing cavity **212** of hoist end member **210** by attachment flap **330**, with flag **300** being attached around an exterior of the flag frame **200**. According to some embodiments, flag facing cavity **212** and attachment flap can include a hook and loop (e.g., Velcro™) system for attachment to the flag frame **200**. Once flag **300** covers the flag frame **200**, the flag frame **200** may light an entire interior perimeter of the flag **300**. Accordingly, flag **300** can attach to hoist end member **210** by attaching hooks (or loops) of attachment flap **330** to respective loops (or hooks) found on flag facing cavity **212**. When flag **300** is attached to flag frame **200**, hoist end border member **328** may sit flush against hoist end member **210**. Additionally, in embodiments including stackable links **450** (not shown) within hoist end member **210**, stackable links **450** may illuminate flag **300**. Similarly, when flag **300** is attached to flag frame **200**, upper border member **322** may sit flush against upper cross member **280**, which provides illumination to flag **300**. Lower border **326** can sit flush against lower cross member **290**. Chain links **250** of lower cross member **290** can illuminate flag **300**. Fly end border member **324** can sit flush against fly end member **230**. In embodiments including stackable links **450** within fly end member, lights within stackable links **450** can also illuminate flag **300**. According to some embodiments, flag **300** can also be attached to flag frame **200** by an additional attachment flap **330** (not shown) disposed on fly end border member **324**. The additional attachment flap **330** may include hooks (or loops) which interface with loops (or hooks) disposed on flag facing cavity **232** of fly end member **230**. Because swivel links **250** can swivel with respect to adjacent swivel links **250**, flag **300** can remain illuminated despite the flag's motion in the wind, because swivel links **250** can mirror the motion of flag **300**. As further shown in FIG. **17**, which depicts a photograph of flag **300**, flag **300** may attach to flag frame **200**, and the combined assembly of flag frame **200** and flag **300** may attach to flagpole **100**. While flag **300** is attached around an exterior of flag frame **200**, the swivel links **250** may illuminate front face **310**, rear face **312**, and border **320**. Additionally, hoist end member and fly end member **230** may provide additional illumination of flag **300**, including front face **310**, rear face **312**, and border **320**. In some embodiments, flag frame **200** may be attached to an ordinary flag that lacks attachment flap **330**. For example, a flag may be positioned and secured to an interior space of flag frame **200**, rather than being attached around an exterior of flag frame **200** as with flag **300**. In such embodiments, the flag may be illuminated on both a front face and a rear face of the flag by lights located within optional stackable links **450**, chain links **250** of upper cross member **280**, and chain links **250** of lower cross member **290**.

Examples of the present disclosure can be implemented according to at least the following clauses:

Clause 1: An illuminated flagpole assembly comprising a flag frame, the flag frame comprising: a hoist end member configured to be selectively attached to a flagpole; a fly end member aligned in parallel with and opposite to the hoist end member; an upper cross member formed by a first plurality of links each connected to and configured to swivel relative to one or more adjacent links of the first plurality of links, the first plurality of links aligned along a first plane and comprising a first link connected to the hoist end member and a second link connected to the fly end member, wherein each link in the first plurality of links comprises a housing; a first plurality of light elements each having at least a portion of which disposed within the housing of a respective link of the first plurality of links; a lower cross member formed by a second plurality of links each connected to and configured to swivel relative to one or more adjacent links of the second plurality of links, the second plurality of links aligned along a second plane parallel to the first plane and comprising a first link connected to the hoist end member and a second link connected to the fly end member, wherein each link in the second plurality of links comprises a housing; and a second plurality of light elements each having at least a portion of which disposed within the housing of a respective link of the second plurality of links.

Clause 2: The illuminated flagpole assembly of clause 1 further comprising the flagpole attached to the hoist end member.

Clause 3: The illuminated flagpole assembly of clause 2, wherein: the hoist end member has an attachment sleeve; and the flagpole further has a tubular body having an attachment section and an extension section, the attachment section of the tubular body defining an opening configured to slidably receive at least a portion of the attachment sleeve of the hoist end member.

Clause 4: The illuminated flagpole assembly of clause 1 further comprising a flag having a front face opposite a back face and a plurality of sides, at least a portion of a first side of the plurality of sides configured to attach to the hoist end member, and at least a portion of a second side of the plurality of sides configured to attach to the fly end member.

Clause 5: The illuminated flagpole assembly of clause 4, wherein the flag is readily attachable to and detachable from the flag frame.

Clause 6: The illuminated flagpole assembly of clause 4, wherein the first and second pluralities of light elements are collectively configured to simultaneously illuminate the front and back faces of the flag when it is attached to the flag frame.

Clause 7: The illuminated flagpole assembly of clause 4, wherein responsive to movement of the flag when the flag is attached to the flag frame: each of the first plurality of links of the upper cross member is configured to swivel relative to the one or more adjacent links of the first plurality of links along the first plane to mirror the movement of the flag; and

each of the second plurality of links of the lower cross member is configured to swivel relative to the one or more adjacent links of the second plurality of links along the second plane to mirror the movement of the flag.

Clause 8: An illuminated flagpole assembly comprising a flag frame, the flag frame comprising: a hoist end member; a fly end member positioned opposite the hoist end member; an upper cross member attachable to the hoist end member at a first end and to the fly end member at a second end, the upper cross member being formed by a first plurality of links aligned along a first plane, each of the first plurality of links being attachable and configured to rotate in the first plane relative to one or more adjacent links of the first plurality of links; a first plurality of light elements each attachable to a respective link of the first plurality of links; a lower cross member attachable to the hoist end member at a first end and to the fly end member at a second end, the lower cross member being formed by a second plurality of links aligned along a second plane parallel to the first plane, each of the second plurality of links being attachable and configured to rotate in the second plane relative to one or more adjacent links of the second plurality of links; and a second plurality of light elements each attachable to a respective link of the second plurality of links.

Clause 9: The illuminated flagpole assembly of clause 8 further comprising a flagpole attached to the hoist end member.

Clause 10: The illuminated flagpole of assembly of clause 9, wherein: the hoist end member comprises an attachment sleeve; the flagpole comprises a tubular body comprising an attachment section and an extension section, the attachment section of the tubular body comprising an opening configured to slideably connect to at least a portion of the attachment sleeve of the hoist end member.

Clause 11: The illuminated flagpole assembly of clause 8 further comprising a flag, the flag comprising a front face opposite a back face, and a plurality of side faces, wherein a first side face of the plurality of side faces is configured to attach to the hoist end member, and a second side face of the plurality of side faces is configured to attach to the fly end member.

Clause 12: The illuminated flagpole assembly of clause 11, wherein the flag is readily attachable to and detachable from the flag frame.

Clause 13: The illuminated flagpole assembly of clause 11, wherein the first and second pluralities of light elements are collectively configured to simultaneously illuminate the front and back faces of the flag when the flag is attached to the flag frame.

Clause 14: The illuminated flagpole assembly of clause 11, wherein responsive to movement of the flag when the flag is attached to the flag frame: each of the first plurality of links of the upper cross member is configured to swivel relative to the one or more adjacent links of the first plurality of links along the first plane to mirror the movement of the flag; and each of the second plurality of links of the lower cross member is configured to swivel relative to the one or more adjacent links of the second plurality of links along the second plane to mirror the movement of the flag.

Clause 15: An illuminated flagpole assembly comprising a flag frame, the flag frame comprising: a hoist end member; a fly end member positioned opposite the hoist end member; an upper cross member attachable to the hoist end member at a first end and to the fly end member at a second end, the upper cross member comprising a first plurality of links, the first plurality of links each connected to one or more adjacent links of the first plurality of links, the first plurality of links aligned along a first plane and configured to swivel with respect to one or more adjacent links of the first plurality of links; a first plurality of light elements each attachable to a respective link of the first plurality of links; a lower cross member attachable to the hoist end member at a first end and to the fly end member at a second end, the lower cross member comprising a second plurality of links, the second plurality of links each connected to one or more adjacent links of the second plurality of links, the second plurality of links each connected to one or more adjacent links of the second plurality of links, the second plurality of links aligned along a second plane parallel to the first plane and configured to swivel with respect to one or more adjacent links of the second plurality of links; and a second plurality of light elements each attachable to a respective link of the second plurality of links.

Clause 16: The illuminated flagpole assembly of clause 15, wherein: the hoist end member comprises a third plurality of links, the third plurality of links each connected to one or more adjacent links of the third plurality of links, the third plurality of links aligned along a third plane perpendicular to the first and second planes and configured to swivel with respect to one or more adjacent links of the third plurality of links; and the fly end member comprises a fourth plurality of links, the fourth plurality of links each connected to one or more adjacent links of the fourth plurality of links, the fourth plurality of links aligned along a fourth plane parallel to the third plane and configured to swivel with respect to one or more adjacent links of the third plurality of links.

Clause 17: The illuminated flagpole assembly of clause 15, further comprising: a flagpole comprising a tubular body comprising an attachment section and an extension section, the attachment section of the tubular body comprising an opening configured to slideably connect to at least a portion of an attachment sleeve of the hoist end member.

Clause 18: The illuminated flagpole assembly of clause 15 further comprising a flag, the flag comprising a front face opposite a back face, and a plurality of side faces, wherein a first side face of the plurality of side faces is configured to attach to the hoist end member, and a second side face of the plurality of side faces is configured to attach to the fly end member.

Clause 19: The illuminated flagpole assembly of clause 18, wherein the first and second pluralities of light elements are collectively configured to simultaneously illuminate the front and back faces of the flag when the flag is attached to the flag frame.

Clause 20: The illuminated flagpole assembly of clause 18, wherein responsive to movement of the flag when the flag is attached to the flag frame: each of the first plurality of links of the upper cross member is configured to swivel relative to the one or more adjacent links of the first plurality of links along the first plane to mirror the movement of the flag; and each of the second plurality of links of the lower cross member is configured to swivel relative to the one or more adjacent links of the second plurality of links along the second plane to mirror the movement of the flag.

In this description, numerous specific details have been set forth. It is to be understood, however, that implementations of the disclosed technology may be practiced without these specific details. In other instances, well-known methods, structures, and techniques have not been shown in detail in order not to obscure an understanding of this description. References to "one embodiment," "an embodiment," "some examples," "example embodiment," "various examples," "one implementation," "an implementation," "example

implementation," "various implementations," "some implementations," etc., indicate that the implementation(s) of the disclosed technology so described may include a particular feature, structure, or characteristic, but not every implementation necessarily includes the particular feature, structure, or characteristic. Further, repeated use of the phrase "in one implementation" does not necessarily refer to the same implementation, although it may.

Throughout the specification and the claims, the following terms take at least the meanings explicitly associated herein, unless the context clearly dictates otherwise. The term "connected" means that one function, feature, structure, or characteristic is directly joined to or in communication with another function, feature, structure, or characteristic. The term "coupled" means that one function, feature, structure, or characteristic is directly or indirectly joined to or in communication with another function, feature, structure, or characteristic. The term "or" is intended to mean an inclusive "or." Further, the terms "a," "an," and "the" are intended to mean one or more unless specified otherwise or clear from the context to be directed to a singular form. By "comprising," "containing," or "including" it is meant that at least the named element, or method step is present in article or method, but does not exclude the presence of other elements or method steps, even if the other such elements or method steps have the same function as what is named.

As used herein, unless otherwise specified the use of the ordinal adjectives "first," "second," "third," etc., to describe a common object, merely indicate that different instances of like objects are being referred to, and are not intended to imply that the objects so described must be in a given sequence, either temporally, spatially, in ranking, or in any other manner.

While certain examples of this disclosure have been described in connection with what is presently considered to be the most practical and various examples, it is to be understood that this disclosure is not to be limited to the disclosed examples, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

This written description uses examples to disclose certain examples of the technology and also to enable any person skilled in the art to practice certain examples of this technology, including making and using any apparatuses or systems and performing any incorporated methods. The patentable scope of certain examples of the technology is defined in the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they have structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal language of the claims.

It is also to be understood that the mention of one or more method steps does not imply a particular order of operation or preclude the presence of additional method steps or intervening method steps between those steps expressly identified. Similarly, it is also to be understood that the mention of one or more components in a device or system does not preclude the presence of additional components or intervening components between those components expressly identified.

What is claimed is:

1. An illuminated flagpole assembly comprising a flag frame, the flag frame comprising:

a hoist end member configured to be selectively attached to a flagpole;

a fly end member aligned in parallel with and opposite to the hoist end member;

an upper cross member formed by a first plurality of links each connected to one or more adjacent links of the first plurality of links, the first plurality of links aligned along a first plane and comprising a first link connected to the hoist end member and a second link connected to the fly end member;

a first plurality of light elements attachable to a respective link of the first plurality of links;

a lower cross member formed by a second plurality of links each connected to one or more adjacent links of the second plurality of links, the second plurality of links aligned along a second plane parallel to the first plane and comprising a first link connected to the hoist end member and a second link connected to the fly end member; and

a second plurality of light elements attachable to a respective link of the second plurality of links.

2. The illuminated flagpole assembly of claim **1** further comprising the flagpole attached to the hoist end member.

3. The illuminated flagpole assembly of claim **2**, wherein:

the hoist end member has an attachment sleeve; and

the flagpole further has a tubular body having an attachment section and an extension section, the attachment section of the tubular body defining an opening configured to slidably receive at least a portion of the attachment sleeve of the hoist end member.

4. The illuminated flagpole assembly of claim **1** further comprising a flag having a front face opposite a back face and a plurality of sides, at least a portion of a first side of the plurality of sides configured to attach to the hoist end member, and at least a portion of a second side of the plurality of sides configured to attach to the fly end member.

5. The illuminated flagpole assembly of claim **4**, wherein the flag is readily attachable to and detachable from the flag frame.

6. The illuminated flagpole assembly of claim **4**, wherein the first and second pluralities of light elements are collectively configured to simultaneously illuminate the front and back faces of the flag when it is attached to the flag frame.

7. The illuminated flagpole assembly of claim **4**, wherein responsive to movement of the flag when the flag is attached to the flag frame:

each of the first plurality of links of the upper cross member is configured to swivel relative to the one or more adjacent links of the first plurality of links along the first plane to mirror the movement of the flag; and

each of the second plurality of links of the lower cross member is configured to swivel relative to the one or more adjacent links of the second plurality of links along the second plane to mirror the movement of the flag.

8. An illuminated flagpole assembly comprising a flag frame, the flag frame comprising:

a hoist end member;

a fly end member positioned opposite the hoist end member;

an upper cross member attachable to the hoist end member at a first end and to the fly end member at a second end, the upper cross member being formed by a first plurality of links aligned along a first plane;

a first plurality of light elements each attachable to a respective link of the first plurality of links;

a lower cross member attachable to the hoist end member at a first end and to the fly end member at a second end, the lower cross member being formed by a second plurality of links aligned along a second plane parallel to the first plane; and

a second plurality of light elements each attachable to a respective link of the second plurality of links.

9. The illuminated flagpole assembly of claim **8** further comprising a flagpole attached to the hoist end member.

10. The illuminated flagpole of assembly of claim **9**, wherein:

the hoist end member comprises an attachment sleeve;

the flagpole comprises a tubular body comprising an attachment section and an extension section, the attachment section of the tubular body comprising an opening configured to slideably connect to at least a portion of the attachment sleeve of the hoist end member.

11. The illuminated flagpole assembly of claim **8** further comprising a flag, the flag comprising a front face opposite a back face, and a plurality of side faces, wherein a first side face of the plurality of side faces is configured to attach to the hoist end member, and a second side face of the plurality of side faces is configured to attach to the fly end member.

12. The illuminated flagpole assembly of claim **11**, wherein the flag is readily attachable to and detachable from the flag frame.

13. The illuminated flagpole assembly of claim **11**, wherein the first and second pluralities of light elements are collectively configured to simultaneously illuminate the front and back faces of the flag when the flag is attached to the flag frame.

14. The illuminated flagpole assembly of claim **11**, wherein responsive to movement of the flag when the flag is attached to the flag frame:

each of the first plurality of links of the upper cross member is configured to swivel relative to the one or more adjacent links of the first plurality of links along the first plane to mirror the movement of the flag; and

each of the second plurality of links of the lower cross member is configured to swivel relative to the one or more adjacent links of the second plurality of links along the second plane to mirror the movement of the flag.

15. An illuminated flagpole assembly comprising a flag frame, the flag frame comprising:

a hoist end member;

a fly end member positioned opposite the hoist end member;

an upper cross member attachable to the hoist end member at a first end and to the fly end member at a second end, the upper cross member comprising a first plurality of links connecting the hoist end member to the fly end member, the first plurality of links aligned along a first plane;

a first plurality of light elements each attachable to a respective link of the first plurality of links;

a lower cross member attachable to the hoist end member at a first end and to the fly end member at a second end, the lower cross member comprising a second plurality of links connecting the hoist end member to the fly end member, the second plurality of links aligned along a second plane parallel to the first plane; and

a second plurality of light elements each attachable to a respective link of the second plurality of links.

16. The illuminated flagpole assembly of claim **15**, wherein:

the hoist end member comprises a third plurality of links, the third plurality of links each connected to one or more adjacent links of the third plurality of links, the third plurality of links aligned along a third plane perpendicular to the first and second planes and configured to swivel with respect to one or more adjacent links of the third plurality of links; and

the fly end member comprises a fourth plurality of links, the fourth plurality of links each connected to one or more adjacent links of the fourth plurality of links, the fourth plurality of links aligned along a fourth plane parallel to the third plane and configured to swivel with respect to one or more adjacent links of the third plurality of links.

17. The illuminated flagpole assembly of claim **15**, further comprising:

a flagpole comprising a tubular body comprising an attachment section and an extension section, the attachment section of the tubular body comprising an opening configured to slideably connect to at least a portion of an attachment sleeve of the hoist end member.

18. The illuminated flagpole assembly of claim **15** further comprising a flag, the flag comprising a front face opposite a back face, and a plurality of side faces, wherein a first side face of the plurality of side faces is configured to attach to the hoist end member, and a second side face of the plurality of side faces is configured to attach to the fly end member.

19. The illuminated flagpole assembly of claim **18**, wherein the first and second pluralities of light elements are collectively configured to simultaneously illuminate the front and back faces of the flag when the flag is attached to the flag frame.

20. The illuminated flagpole assembly of claim **18**, wherein responsive to movement of the flag when the flag is attached to the flag frame:

each of the first plurality of links of the upper cross member is configured to swivel relative to the one or more adjacent links of the first plurality of links along the first plane to mirror the movement of the flag; and

each of the second plurality of links of the lower cross member is configured to swivel relative to the one or more adjacent links of the second plurality of links along the second plane to mirror the movement of the flag.

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